TheInformationEdge™

User's Guide

112206

©2006 Blackbaud, Inc. This publication, or any part thereof, may not be reproduced or transmitted in any form or by any means, electronic, or mechanical, including photocopying, recording, storage in an information retrieval system, or otherwise, without the prior written permission of Blackbaud, Inc.

The information in this manual has been carefully checked and is believed to be accurate. Blackbaud, Inc., assumes no responsibility for any inaccuracies, errors, or omissions in this manual. In no event will Blackbaud, Inc., be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of damages.

In the interest of continuing product development, Blackbaud, Inc., reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation.

The Information Edge, *The Raiser's Edge*, *The Financial Edge*, and *Blackbaud* are registered trademarks of Blackbaud, Inc.

All other products and company names mentioned herein are trademarks of their respective holder.

TIE1.80UsersGuide-112206

The Information Edge User's Guide

Contents

OVERVIEW 1

Understanding The Information Edge 2
Getting Started With The Information Edge 5

GETTING STARTED WITH THE INFORMATION EDGE 7

Information Edge Quick Start 8
Dependencies 21

CONFIGURATION 23

Data Marts 26
Tables 61
Cubes 63
Parameters 75
Views 80
Snapshots 86
Monitored Fields 87
Reports 89
Exports 89
Smart Fields 100
Selections 111
WriteBacks 118
Publications 123
Schedules 127
Data Sources 129
Security 136

ANALYTICS 141

Creating Reports 142
Quick Tips for Using Pivot Tables and Charts 143
Pivot Tables 145
Charts 154
Data Analyzer Views 161
Custom Crystal Reports 165
Copying Reports 168
Deleting and Moving Reports 169
Dashboards 169

MARKETING SEGMENTATION 171

Navigating in Segmentation 173
Creating Segmentations 174
Test Segments and Test Segmentations 188
Custom Properties 191
Activating Segmentations 193
Exporting Segmentations 194
Analyzing Segmentations 198

UNIVERSAL SOURCE CONNECTOR 203

New Universal Source Connector Features in The Information Edge 1.7 205
Creating Data Marts with XML 214
Adding Universal Source Connector Data Marts 214
The Information Edge XML Editor 221
XML Schema Reference 241

DATA WAREHOUSES 259

Key Values 260
Adding Data Warehouses 260

SMART FIELD DETAILS 265

SOLUTIONS 319

Pledge Valuation Analytic 320

GLOSSARY 327

INDEX 333

New Features in This Release

Several new features are included in ***The Information Edge*** 1.80.

Selections. Selections enable you to assemble groups of constituents using tools similar to queries in other Blackbaud products. Using selections in *Marketing Segmentation* can reduce the need to create smart fields "on the fly" and simplify the creation of segmentations. For more information, see "Creating Selections" on page 111.

Marketing Segmentation. Several changes have been made to the *Marketing Segmentation* module. You can now base segments on the new "selections" feature so you can more easily define your segmentations.

Additionally, a new tabbed Wizard is available when you create segmentations. For more information, see "Creating Segmentations" on page 174.

Dependencies. You can now view a list of dependencies for any ***Information Edge*** object at any time. The program checks dependencies among all the different types of objects and displays a comprehensive list.

Additionally, when deleting an item with dependencies, a warning message appears. You can view all dependencies from the warning message to determine if the item is really safe to delete or not.

For more information, see "Dependencies" on page 21.

Using the Documentation

User Guide. This user guide contains examples, scenarios, procedures, graphics, and conceptual information. Side margins contain notes, tips, warnings, and space for you to write your own notes.

You can access a pdf version of the guide by selecting **Help**, **The Information Edge User's Guide** from the menu bar. In the pdf, page numbers in the Table of Contents, Index, and all cross-references are hyperlinks. For example, click the page number by any heading or procedure on a Table of Contents page to go directly to that page.

Help File. To access the help file in the program, select **Help**, **Help Topics** from the menu bar. Or from any screen in the program, press **F1** on your keyboard to access information about that particular screen. You can search for terms of phrases on the Search tab. Narrow your search in the help file by enclosing your search in quotation marks on the Search tab.

Welcome

Overview

Chapter 1

Contents

Understanding The Information Edge 2
Getting Data to Those Who Need It 3
The Information Edge and Other Blackbaud Software 3
Information Edge Data Flow 4
Getting Started With The Information Edge 5

The primary goal of business intelligence is to help you make informed decisions faster as a result of high speed, interactive data reporting and analysis. Blackbaud's comprehensive business intelligence solution, ***The Information Edge***, extracts data from transactional and operational programs (including ***The Raiser's Edge***), manipulates the data, and quickly displays it back in significant ways such as interactive reports. ***The Information Edge*** enables Management Reporting by making it easy to navigate through huge amounts of data and delivering a high-level view of your organization.

The Information Edge is fast. It can deliver most responses in seconds, with even the most complicated reports taking no more than approximately twenty seconds. ***The Information Edge*** is also analytical. Using online analytical processing, (OLAP), it can handle any business logic and statistical analysis relevant to your organization and present the data in a way that can be easily understood.

The Information Edge is multidimensional. It can organize data into meaningful business structures such as constituents, gifts, regions, and time. ***The Information Edge*** provides a multidimensional conceptual view of the data, allowing diverse bits of information to be cross-tabulated against each other to deliver matrix reporting and graphs. This includes the use of hierarchies that enable you to drill-down from one level to another (for example, Country into City).

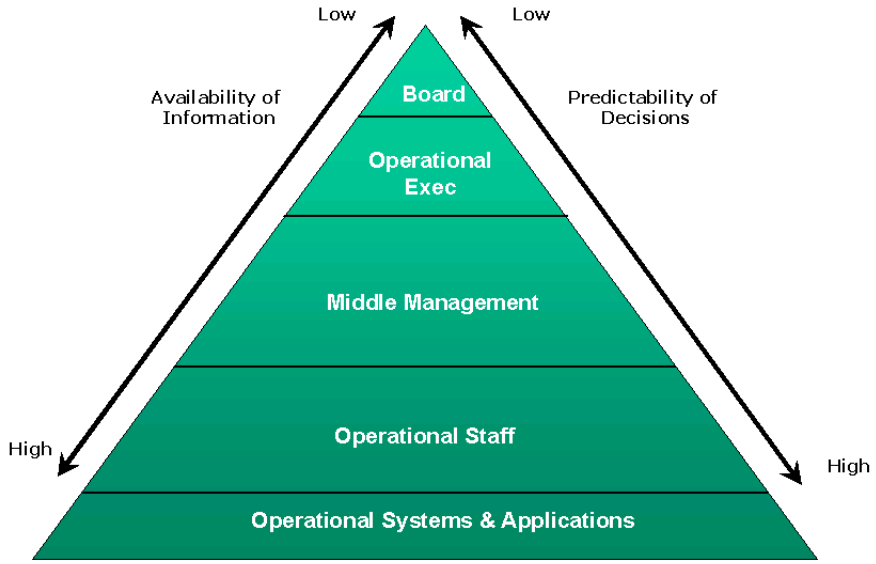
Understanding The Information Edge

Most relational database (also called online transaction processing or OLTP) transaction systems (including ***The Raiser's Edge***) are optimized for transactional entry and data integrity. ***The Raiser's Edge*** excels in these two areas. However, relational database systems are not intended for high-speed "what if?" and aggregate reporting.

Because ***The Information Edge*** is designed for this type of reporting, it compliments the relational database solution. Not only does ***The Information Edge*** enable you to report on massive amounts of data at "thought speed," it also greatly reduces the burden placed on the OLTP database system because users are not trying to create data intensive reports directly from the OLTP database.

Getting Data to Those Who Need It

The Information Edge supports analytical and management reporting with sub-second response times in a highly optimized reporting environment. Management reporting enables decision makers to get the information they need quickly. The following diagram represents the typical information structure of an organization.



Commonly, the higher on the pyramid a person is, the longer critical analytical information takes to reach that person. This is a by-product of demands placed on an OLTP system to produce reports containing vast amounts of data, possibly from a variety of sources. ***The Information Edge*** inverts this pyramid by making multidimensional report data available to decision makers virtually instantaneously. ***The Information Edge*** enables those that need information to get it in seconds, and it provides the ability to analyze data with a choice of desktop viewers and interactive tools including Pivot Tables, Charts, *Crystal Reports*, and *Internet Explorer*.

The Information Edge and Other Blackbaud Software

Although ***The Raiser's Edge*** or ***Financial Edge*** are not required to use ***The Information Edge***, combining the strengths of the programs helps you better manage your fundraising efforts. ***The Information Edge*** enables you to achieve the best value from other Blackbaud products through analytical reporting.

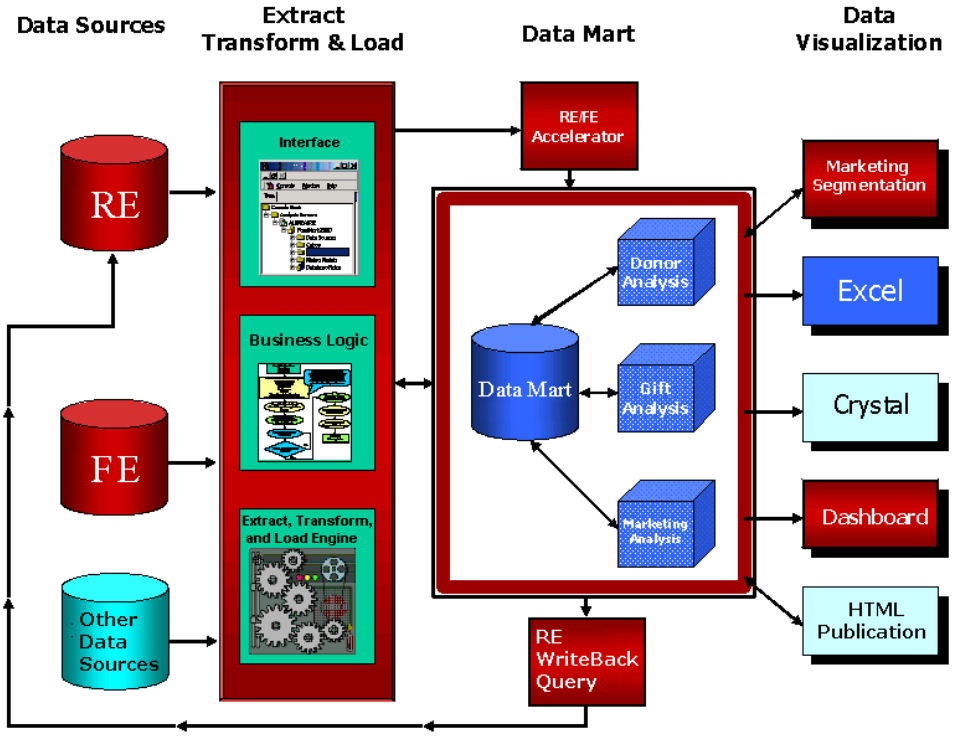
The three programs are highly integrated. Because ***The Information Edge*** is designed by the creators of ***The Raiser's Edge*** and ***Financial Edge***, the integration is seamless. ***The Information Edge*** is able to manage daily changes to data in the other programs and can provide reporting back into them.

The Information Edge uses data provided from the *Export* functionality in ***The Raiser's Edge*** or ***Financial Edge***. It transforms this data into an optimal design for high-speed analysis and reporting. Using ***The Information Edge***, you can create reports that are interactive, easy to navigate, and fast to generate — even when they contain vast amounts of data. Additionally, because ***The Information Edge*** operates separately from ***The Raiser's Edge***, the burden placed on ***The Raiser's Edge*** when you run large queries is removed, thereby speeding up the program for data entry.

The end result is a solution that has the best of both worlds. High-speed transactional entry in ***The Raiser's Edge*** and ***Financial Edge***, and high-speed reporting and analysis with a database structured specifically to support that role in ***The Information Edge***.

Information Edge Data Flow

This diagram illustrates the flow of information with ***The Information Edge***. Blackbaud takes data from sources such as ***The Raiser's Edge***, ***The Financial Edge***, and other databases you may maintain, and creates a data mart. A data mart is a collection of data structured in a way to facilitate analysis. When a data mart is installed in ***The Information Edge***, the data is extracted, transformed for optimum analytical reporting, and loaded into ***The Information Edge***.



After installing data marts, you can then display analytical data in Pivot Tables, Charts, or Data Analyzer Views. You can publish Pivot Tables, Charts, and *Crystal Reports* as interactive HTML pages on your intranet, giving key personnel access to the information gathered by your analytical reports. You can also export data in character delimited or XML formats.

Additionally, data can flow in both directions because you can create ***Raiser's Edge*** queries based on data gathered by ***The Information Edge***. For example, in ***The Information Edge*** you can create a segmentation to show your best constituent prospects for a mailing based on recency, frequency, and monetary amounts of giving. You can then use the *WriteBack* feature of ***The Information Edge*** to create a query in ***The Raiser's Edge*** that groups these constituents. Additionally, you can use WriteBacks to add specific attribute values to all or selected ***Raiser's Edge*** records.

Getting Started With The Information Edge

For information about installing ***The Information Edge***, see the *Installation Guide*. To learn more about the features of the ***The Information Edge*** and how to use them, see "Information Edge Quick Start" on page 8.

If at any time you encounter an unfamiliar term while reading this guide, see the Glossary on page 327.

Getting Started with The Information Edge

Chapter 2

Contents

Information Edge Quick Start. 8
Accessing The Information Edge 8
Adding a Data Mart 8
Analytics 9
Navigating in The Information Edge 10
Tree View 11
Grouping Items with Folders 12
Friendly Names 12
Menu Bar 12
Action Bar 13
Changing Grid Displays 14
Dashboards 15
Tables 16
Understanding Cubes 16
Understanding Smart Fields 17
Sending Data to The Raiser's Edge With WriteBack 19
Exporting Data From The Information Edge 19
Publications 20
Understanding Segmentation 21
Dependencies 21

For a basic overview of the features in ***The Information Edge***, see the following section, Information Edge Quick Start. After you become acquainted with the features, detailed information is provided for each of them in separate sections later in this guide.

Information Edge Quick Start

The Information Edge is designed to give you the ability to easily analyze all data affecting your fundraising efforts. To help you quickly understand the basics of ***The Information Edge*** and how to navigate in it, use the following quick start sections. The rest of this guide includes details on the different functions and areas of the program. You will also find procedures on how to use ***The Information Edge***. We suggest reading these sections thoroughly so you can use the program to its full potential.

Accessing The Information Edge

To access ***The Information Edge***, click the **The Information Edge** shortcut on your desktop. The Connect to SQL Server screen appears. Enter the log in information you specified for your installation of *SQL Server*. ***The Information Edge*** console appears.

The Information Edge console houses all the functions of the program in one master location, but before most of these functions are available, you need to add a data mart.

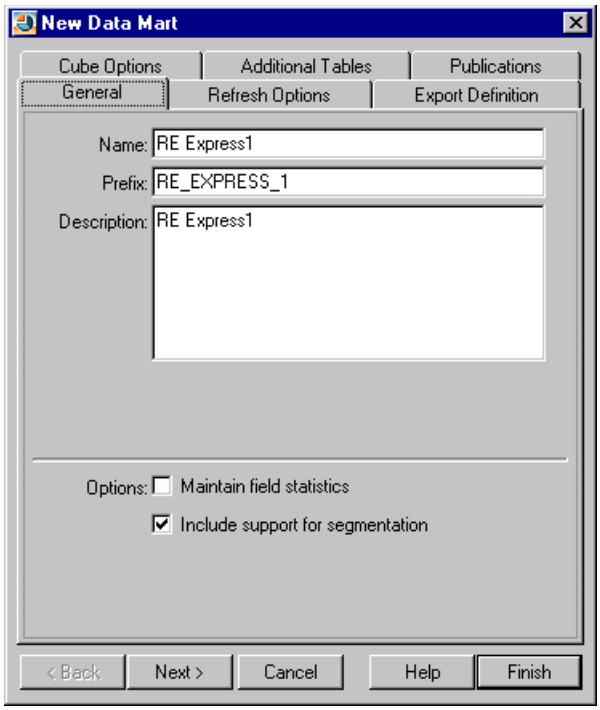
Adding a Data Mart

You must have administrative rights to access *Configuration*. If you do not have administrative rights, *Configuration* does not appear on the navigation bar.

To begin using ***The Information Edge*** you must install a data mart in *Configuration*. A data mart is a copy of your data, optimized for high speed reporting.

You can obtain data marts in several ways. Blackbaud can construct a custom data mart based on the data sources you want to include in your ***Information Edge*** analyses. Additionally, using the *RE:Express* or *FE:Express* features, you can construct a data mart based on fields you specify using ***Raiser's Edge*** or ***Financial Edge*** export functionality. Also, if you have ***The Information Edge Enterprise***, the *Universal Source Connector* enables you to use XML to describe the tables and cubes that make up a data mart. For information about the *Universal Source Connector*, see "Universal Source Connector" on page 203.

To install a data mart, click **Configuration** on the Information Edge bar on the left. On the menu bar select **File**, **New**, **Data Mart**. Select the type of data mart you want to install. For example, when you select to install an *RE:Express* data mart, the Properties tabs appear.



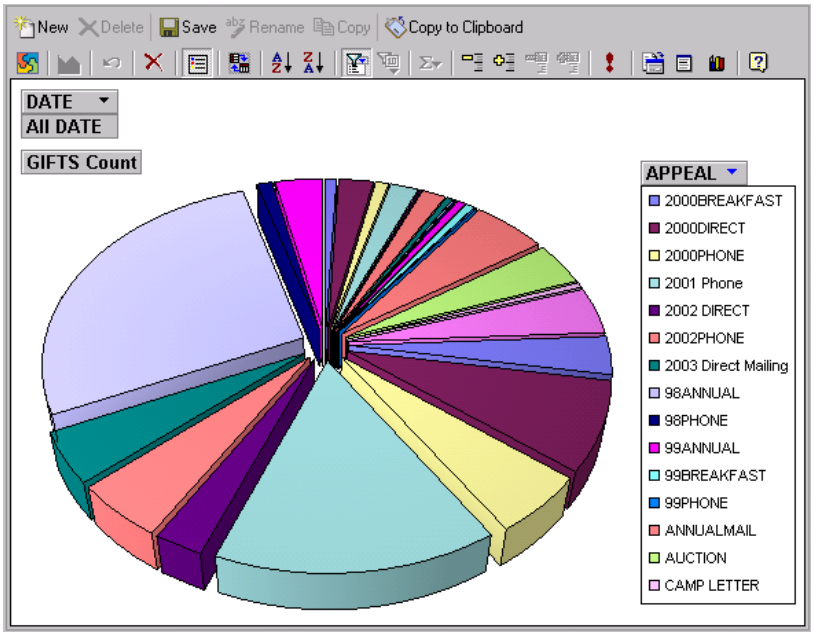
To create a data mart using *RE:Express*, you need to create an export to specify the data to be included in the data mart. For more information, see “Creating and installing an RE:Express data mart” on page 26. You need to perform similar steps to create an *FE:Express* data mart. For more information, see “Creating and installing an FE:Express data mart” on page 47. For information about installing a data mart provided by Blackbaud, see “Installing a data mart created by Blackbaud” on page 58.

After you install a data mart, you can use the information in it to create analytical reports in ***The Information Edge***. For more information about data marts, see “Data Marts” on page 26.

Analytics

Analytics are the reports that make up the core of ***The Information Edge***. Before you can begin creating reports, an administrator must create a data mart which contains the data that will be analyzed in your reports.

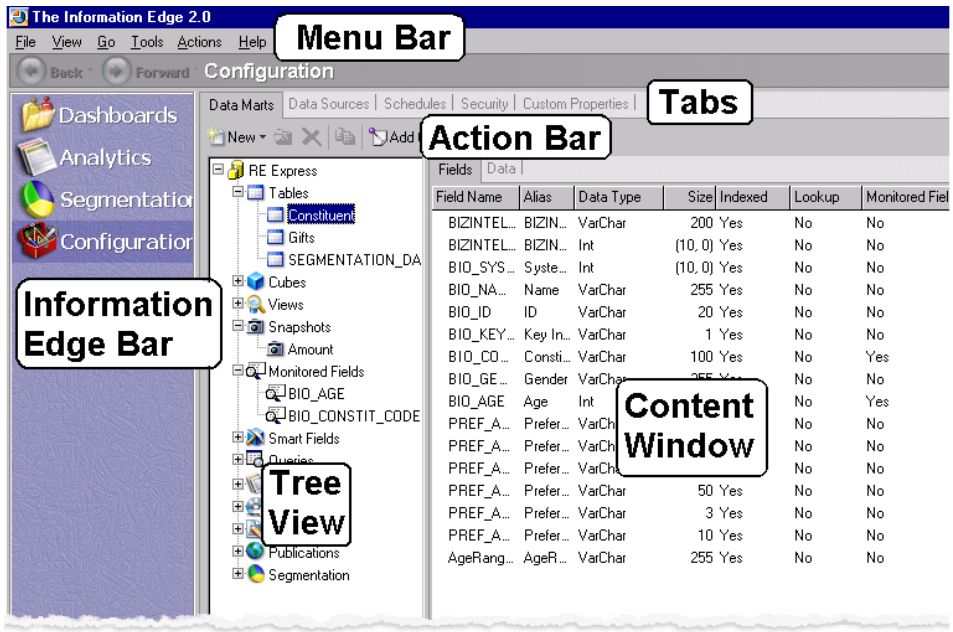
When you click **Analytics** in the navigation bar. The Analytics page appears. Any available data marts appear in the tree view. For each data mart, you can generate interactive reports including Pivot Tables, Charts, and Data Analyzer Views.



For more information, see “Pivot Tables” on page 145, “Charts” on page 154, and “Data Analyzer Views” on page 161.

Navigating in The Information Edge

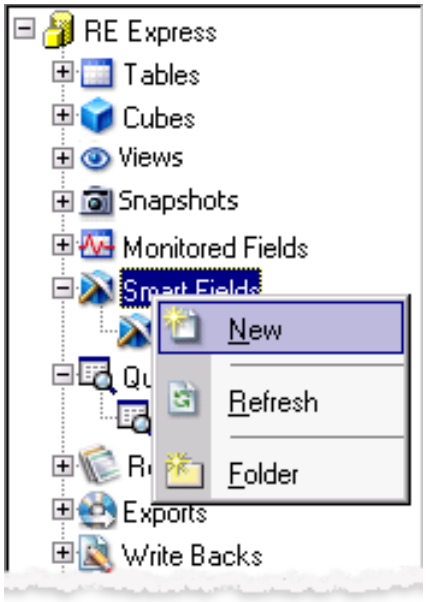
After you install a data mart, many features become available on ***The Information Edge*** console. The console includes the Information Edge bar on the left and the main content window on the right.



In the console, you can store frequently used items in a personal Dashboard and access other main areas of the program such as *Configuration* and *Analytics*. In *Configuration*, the tree view enables you to easily select a function. The display on the right depends on your selection in the tree view.

Tree View

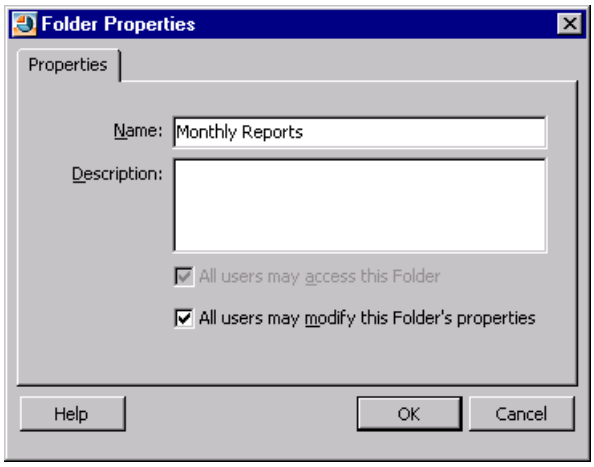
The tree view is a central location for you to create items and run functions in several areas of the program. Different items are available in the tree view depending on the area of the program it is accessed from. Each item in the tree view contains a menu you can access by right-clicking the item. The right-click menu contains options specific to that item.



Use the tree view to navigate, view information, and run functions in *Configuration*, *Analytics*, and *Segmentation*.

Grouping Items with Folders

From the tree view right-click menu, you can create **Folders** to group items together. You may want to create different folders to group specific reports or smart fields you use or create. For example, in *Analytics* you may want to group the reports you monitor weekly in different folders from those you monitor monthly.



You can mark checkboxes to specify whether other users are able to modify a folder's properties or access the items in it.

Once a folder is created, it appears in the tree view and you can drag and drop other items from the tree view into it. When you delete a folder, all of its contents are also deleted.

You can move items from one folder to another. If you move a report that is viewable by others into a folder that is not, the report is removed from any other users' views and dashboards.

Friendly Names

When creating Smart Fields or using any other ***Information Edge*** feature that involves writing SQL statements, always use the real name for tables. Avoid using friendly names for tables in SQL statements.

To make reading reports easier to understand, in many cases database table and field names are replaced automatically with more readable "friendly" names. For example, a constituent table in an RE:Express data mart has the name of the data mart appended to the front of it in the database; however the friendly name for the table would simply be "Constituent."

Menu Bar

File. When you select an item in the tree view, you can create a new item of that type, or open or delete an existing item. If you have administrative rights, you can also install and remove data marts, and exit the program. Additionally, you can select the **Core Solutions** option in *Configuration* to import data marts created by Blackbaud.

View. You can specify whether or not you want to view the navigation bar and "friendly names." You may want to turn off the navigation bar to increase the amount of available screen space when working with reports. Friendly names can help make items easier to identify, but in some cases (when working with SQL statements for example) you may want to turn them off.

Go. Use this menu as an alternative to the navigation bar to access different areas of the program.

Tools. When you purchase an ***Information Edge*** optional module, you are given an activation code. To unlock the module, select **Tools**, **Unlock Codes**. A screen appears for you to enter your code.

With the optional module *Marketing Segmentation*, you can specify **Custom Properties** for your segmentations. For more information, see "Custom Properties" on page 191.

Additionally, some other options are available on the **Tools** menu depending on the type of item you have selected in the tree view. For example, when you have a cube selected, you can specify whether or not the cube should refresh automatically each time the data mart to which it belongs is refreshed.

Actions. The available items vary, depending on the currently selected item in the tree view. For example, if you select a data mart in the Configuration tree view, you can refresh the data or restart a previous refresh. The Restart option is available only when a previous data mart refresh was interrupted for some reason. To save time, you can begin processing from the last checkpoint instead of starting over.

Help. Access help topics to assist in using ***The Information Edge*** and learn more about the particular version you have installed.

You can try optional modules before purchasing them. For more information, contact solutions@blackbaud.com.

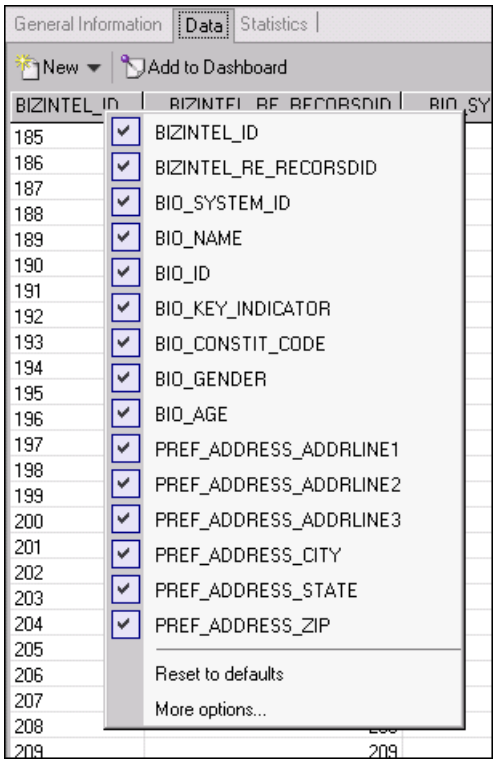
Action Bar

Several Action bar buttons are available no matter what item is selected in the tree view and are sensitive to the item selected in the tree view. For example, if a selected item can be refreshed (smart fields or data marts) clicking **Refresh** begins the process for that item. If the selected item cannot be refreshed (tables), clicking the button displays a dropdown list of items that can be refreshed.

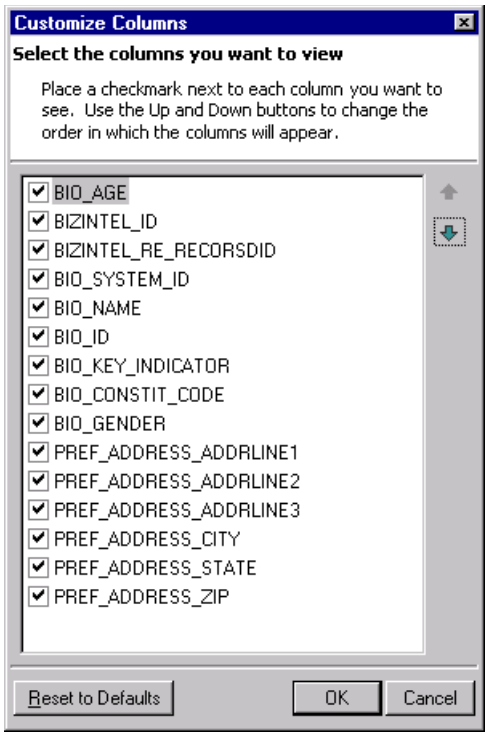
You can also view dependencies for selected ***Information Edge*** objects. Dependencies are other items that would be affected if you edited or deleted the selected item. For more information, see "Dependencies" on page 21.

Changing Grid Displays

You can change the columns in most ***Information Edge*** grids by right-clicking. For example, when you right-click on the Data tab of a Table grid, a screen appears on which you can select the fields that appear in the grid.



When you select **More options**, the Customize Columns screen appears.



On this screen you can select the columns to appear in the grid, and drag and drop them up or down to specify the order in which the columns appear.

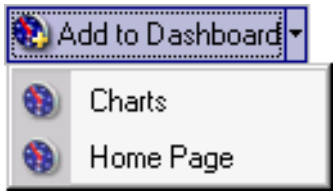
Dashboards

Dashboards offer a convenient central place for you to view Pivot Tables, Charts, Data Analyzer views, and other ***Information Edge*** items. The first time you access ***The Information Edge***, it opens to the Dashboard page. To create a Dashboard, click **New** in the action bar and provide a **Name** and **Description**. When you create the new Dashboard, it initially has no content. You can add content by right-clicking an item in the treeview and selecting **Add to Dashboard**.

You must create and name at least one Dashboard before you can add content. Once you create a Dashboard, the **Add to Dashboard** right-click menu option is enabled on analysis items.

Because all analysis items you can include on a Dashboard come from data marts, if you have not yet created a data mart, you must do that before you can include content in the Dashboard. For more information, see “Adding a Data Mart” on page 8.

When you select **Dashboards** in the navigation bar, the Dashboard page appears listing any Dashboards you have created. If you have multiple Dashboards, when you specify that an item be included on the Dashboard, you can select the specific Dashboard on which you want to include it.

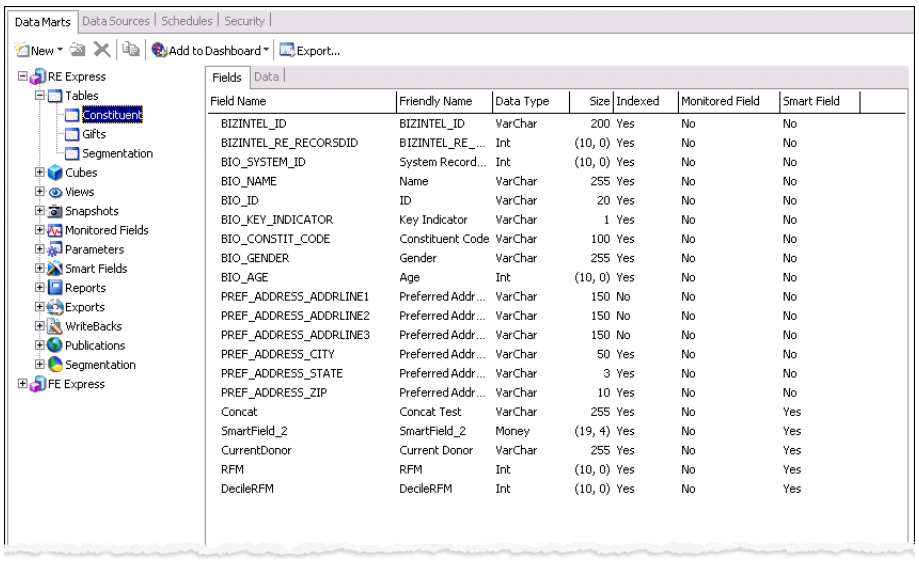


When you view items in the Dashboard, they can be maximized, minimized, or viewed simultaneously with other dashboard items.

Tables

You must have administrative rights to access *Configuration*. If you do not have administrative rights, *Configuration* does not appear on the navigation bar.

You can view the database tables included in a data mart. You can also create "Snapshot" tables to create views of tables "frozen" at a certain point in time. This enables you to compare data as it exists at a certain time with current data after you refresh it. Additionally, you can monitor specific fields in a table to easily track data as it changes over time.



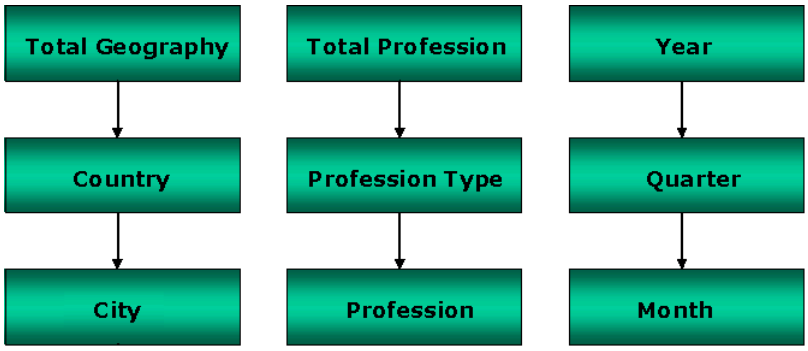
Field Name	Friendly Name	Data Type	Size	Indexed	Monitored Field	Smart Field
BIZINTEL_ID	BIZINTEL_ID	VarChar	200	Yes	No	No
BIZINTEL_RE_RECORSDID	BIZINTEL_RE_...	Int	(10, 0)	Yes	No	No
BIO_SYSTEM_ID	System Record...	Int	(10, 0)	Yes	No	No
BIO_NAME	Name	VarChar	255	Yes	No	No
BIO_ID	ID	VarChar	20	Yes	No	No
BIO_KEY_INDICATOR	Key Indicator	VarChar	1	Yes	No	No
BIO_CONSTIT_CODE	Constituent Code	VarChar	100	Yes	No	No
BIO_GENDER	Gender	VarChar	255	Yes	No	No
BIO_AGE	Age	Int	(10, 0)	Yes	No	No
PREF_ADDRESS_ADDRLINE1	Preferred Addr...	VarChar	150	No	No	No
PREF_ADDRESS_ADDRLINE2	Preferred Addr...	VarChar	150	No	No	No
PREF_ADDRESS_ADDRLINE3	Preferred Addr...	VarChar	150	No	No	No
PREF_ADDRESS_CITY	Preferred Addr...	VarChar	50	Yes	No	No
PREF_ADDRESS_STATE	Preferred Addr...	VarChar	3	Yes	No	No
PREF_ADDRESS_ZIP	Preferred Addr...	VarChar	10	Yes	No	No
Concat	Concat Test	VarChar	255	Yes	No	Yes
SmartField_2	SmartField_2	Money	(19, 4)	Yes	No	Yes
CurrentDonor	Current Donor	VarChar	255	Yes	No	Yes
RFM	RFM	Int	(10, 0)	Yes	No	Yes
DecileRFM	DecileRFM	Int	(10, 0)	Yes	No	Yes

For more information about tables, Snapshot Tables, and Monitored Fields, see "Tables" on page 61.

Understanding Cubes

OLAP (online analytical processing) cubes are one of the keys to analytical reporting. OLAP is a type of data processing that enables you to easily and selectively extract and view data from different points-of-view. To enable this kind of analysis, OLAP data is stored in a multidimensional database.

You can think of a relational database (the type usually used for transaction gathering) as flat. The relational database is organized by tables with rows representing records and columns representing individual fields within the records. A multidimensional database can examine each piece of data from many different perspectives. Each of these perspectives is called a "dimension." For example, when you create a data mart from ***Raiser's Edge*** data using *RE:Express*, each code table brought into the data mart is a dimension. Each attribute, biographical table, and gift table is a dimension. In the following example, Total Geography, Total Profession, and Year represent dimensions.



Because of the cubelike structure of the multidimensional database, ***The Information Edge*** can locate the intersection of dimensions side by side, top to bottom, or in any other orientation within the cube.

When Blackbaud creates a data mart based on your data sources, the OLAP cubes you need to analyze your data are part of that data mart. You can add new dimensions to the cubes based on the tables created from your data sources. You can also add new "measures" to analyze the data in the dimensions. Measures are numeric values such as constituent or gift count, or gift amount. These are the actual numbers on which you base your reports. For example, you may want to "measure" the total gifts given by constituents of a certain profession who live in a certain city.

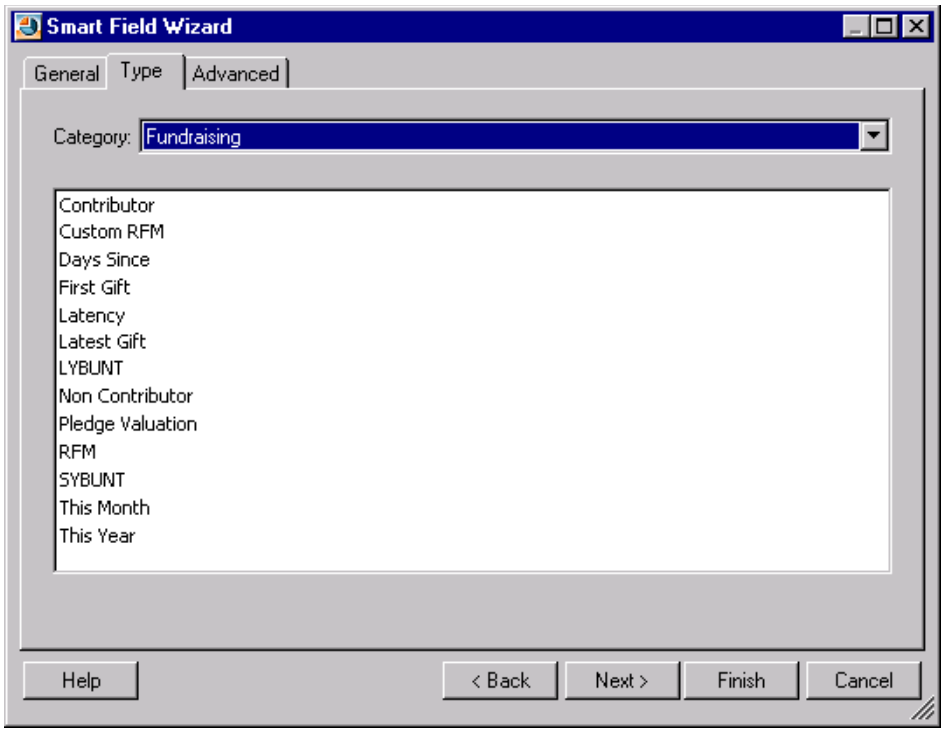
For more information, see "Cubes" on page 63.

Understanding Smart Fields

Smart fields are new fields you create that give you increased flexibility in working with ***Information Edge*** data. Many smart field types are included in ***The Information Edge***. You can use these types to create smart fields for specific tables in your data marts. For example, you can determine a recency, frequency, and monetary score for donors by creating a smart field for your constituent table based on the **Blackbaud RFM score** smart field type.

Once you create a smart field, it is populated by your data and can then be incorporated into your Pivot Tables, Charts, and Data Analyzer Views. Smart fields also form the basis for *RE:WriteBack* queries you create in ***The Raiser's Edge***.

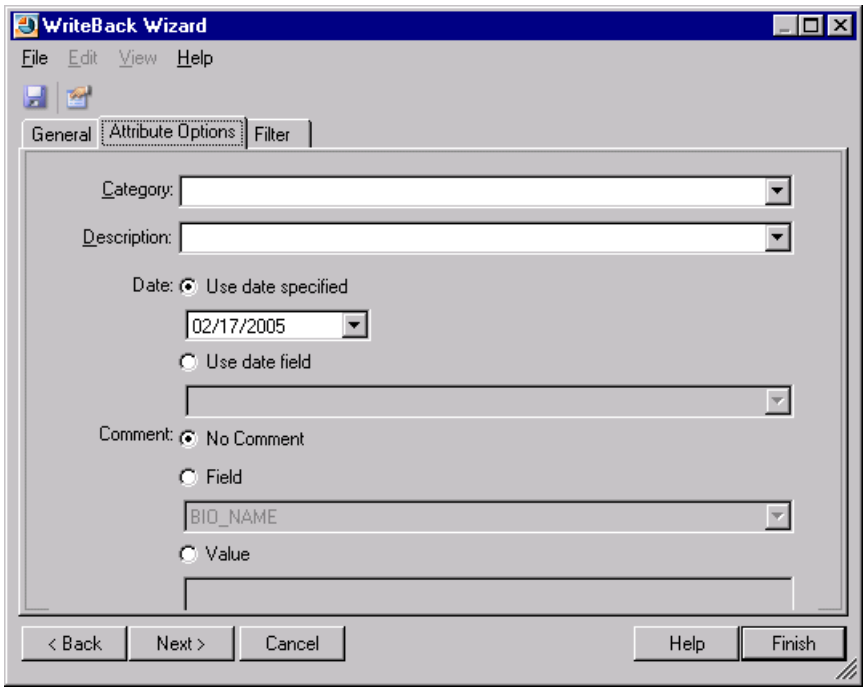
Smart fields can be used as building blocks. You can create smart fields, then use those smart fields to create additional smart fields. You can also use the Expression Wizard to help write SQL statements that specify values or filters for your smart fields.



For more information about using Smart Fields, see “Smart Fields” on page 100.

Sending Data to The Raiser's Edge With WriteBack

You can send information from ***The Information Edge*** back to ***The Raiser's Edge*** by grouping records in a static query, or specifying an attribute to include on all or selected records.



You can filter the included records by specific smart field value or by a value derived by a SQL expression.

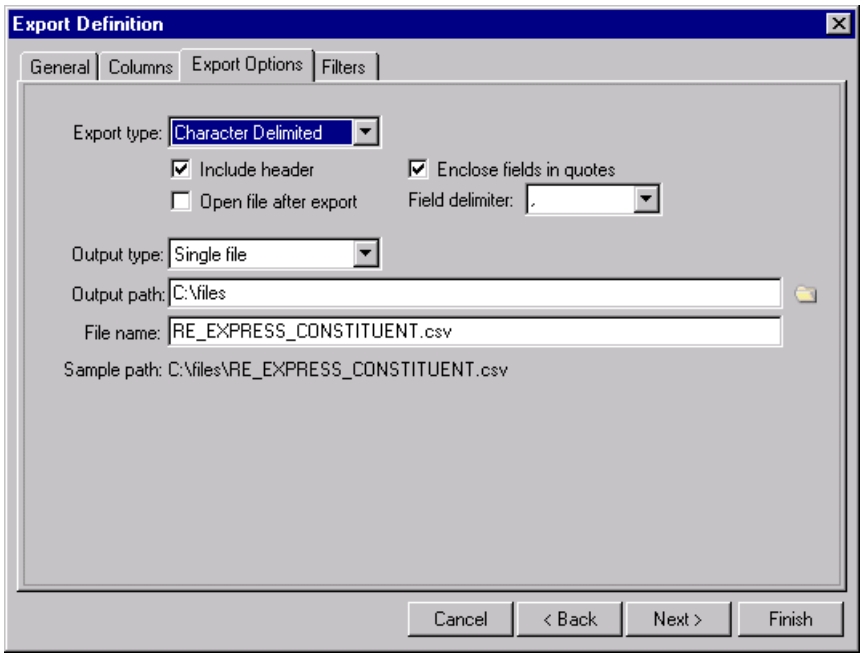
For more information, see "WriteBacks" on page 118.

Exporting Data From The Information Edge

On the Export Definitions page, you can export information from tables within your data marts. You can export the data in as many fields within a table as you want. For example, you may want to create an export for a segmentation to send to a mailing house. You can also create exports directly from tables, Views, and Monitored fields.

If you have the *Marketing Segmentation* optional module, you can also create queries based on segmentations. For more information, see "Importing segmentation data into The Raiser's Edge with the segmentation plug-in" on page 196.

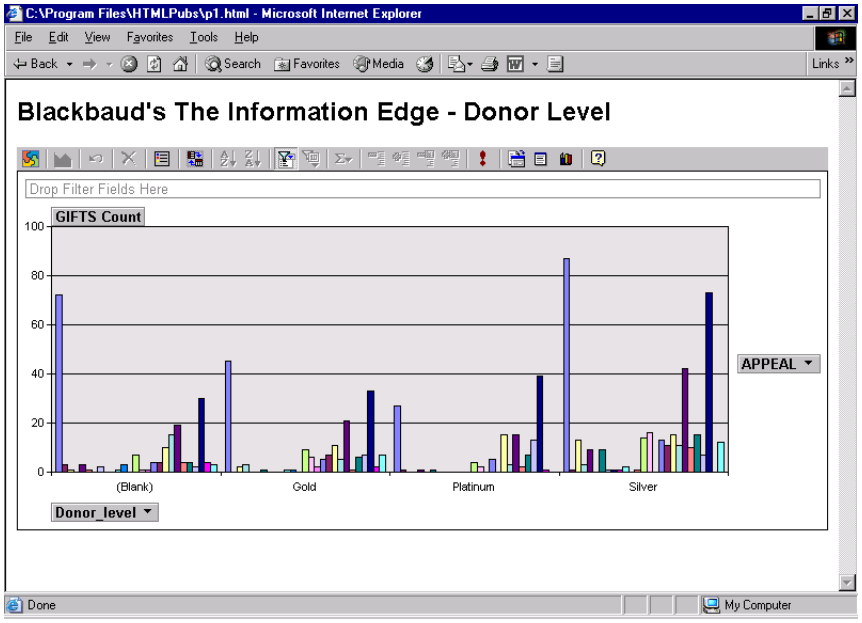
Exports can be in character separated value, Excel, or XML format.



For more information about Export, see “Exports” on page 89.

Publications

Publications enable you to save a Pivot Table, Chart, or *Crystal Report* on a Web page, which can be viewed on your intranet by anyone with a browser. This tool enables you to extend the power of ***Information Edge*** interactive reporting across your entire company.



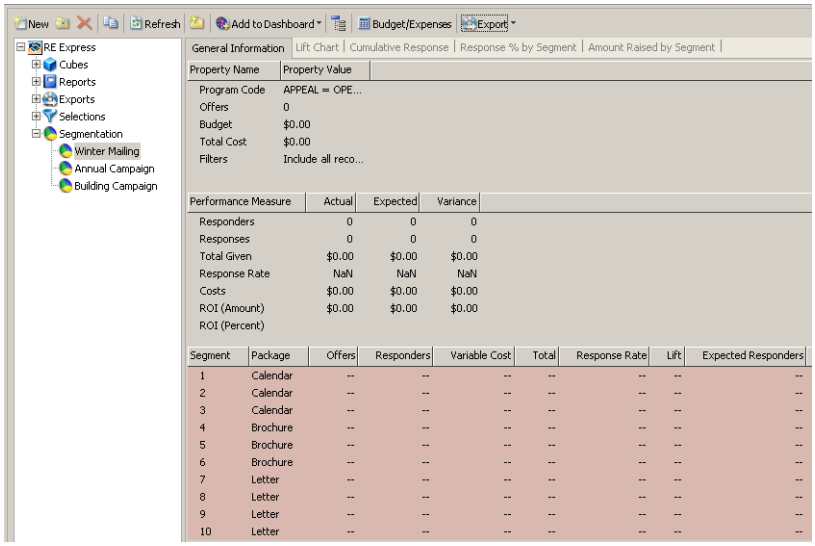
For more information, see “Publications” on page 123.

Understanding Segmentation

If you have the optional module *Marketing Segmentation*, you can create segmentations that enable you to decide how to best target your appeals, in particular your mailings. With the *Marketing Segmentation* module, if you are only mailing to select constituents, you can use segmentation to determine your best prospects. If you have different types of mailings, you can determine how to best target each type.

Using segmentation, you can group donors on the basis of characteristics such as demographic, geographic, recent giving history, and wealth. Different segments often have different or unique needs. Segmentation helps the effectiveness of your fundraising because certain segments may represent more attractive or attainable donors than others, and because different segments often require customized appeals.

You can analyze segmentation using tools such as Lift Charts, and export segmentations in standard formats for use by mailing or fulfillment houses, or in a format optimized for use in ***The Raiser's Edge***.



For more information about creating segmentations, see "Marketing Segmentation" on page 171.

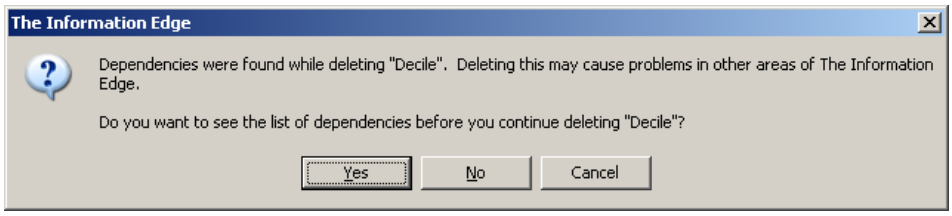
Dependencies

You can view a list of dependencies for any ***Information Edge*** object at any time. The program checks dependencies among all the different types of objects and displays a comprehensive list.

Additionally, when deleting an item with dependencies, a warning message appears. You can view all dependencies from the warning message to determine if the item is really safe to delete or not.

Dependency checking is not available for Views that extend across multiple data marts.

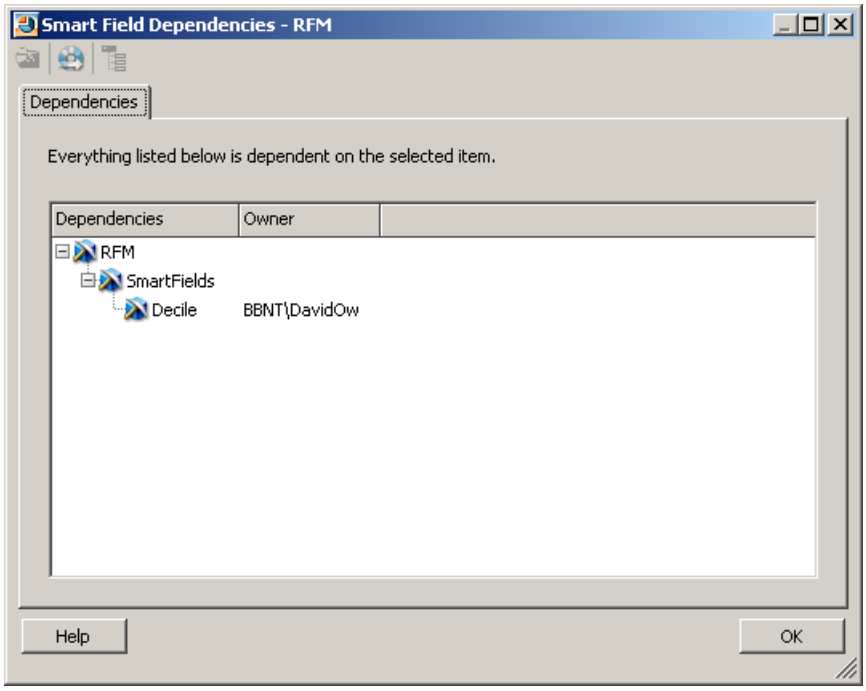
For example, if you delete a smart field on which a segmentation is dependant, a warning message appears.


The Information Edge
Dependencies were found while deleting "Decile". Deleting this may cause problems in other areas of The Information Edge.
Do you want to see the list of dependencies before you continue deleting "Decile"?
Yes
No
Cancel

If you click **Yes**, a view of this and any other dependencies appears. If you click **No**, the item is deleted without viewing dependencies, and if you click **Cancel** the delete is cancelled and the dependency view does not appear.

➢ Viewing dependencies

1. In the tree view, select the item for which you want to view dependencies
2. On the **Actions** menu, select **Dependencies**. The Dependencies screen for the selected item appears.



   The screen lists all objects that will be affected if you edit the properties of the selected item.

   You can click toolbar buttons to open a selected item in the list, export the list, or view a separate list of dependencies for a selected item in the current list.

3. Click **Close** to return to the console.

Configuration

Chapter 3

Contents

Data Marts **26**
RE:Express 26
Incremental vs. Full Refresh 30
Adding Data from Other Tables to an RE:Express or FE:Express Data Mart 39
BIZINTEL IDs in RE:Express Data Marts 46
FE:Express 46
BIZINTEL IDs in FE:Express Data Marts 57
Installing Data Marts Created by Blackbaud 58
Refreshing Data in Data Marts 59
Tables **61**
Fields Tab 62
Field Statistics 62
Data Tab 63
Cubes **63**
Refreshing Data in Cubes 64
Adding Dimensions 65
Adding Measures 66
Adding Calculated Members 67
Calculated Member Templates 69
Parameters **75**
Parameter Filter Wizard 78
Tips for Creating Parameters 79
Views **80**
Expression Wizard 83
Expression Wizard Conditions 84
Snapshots **86**
Monitored Fields **87**
Reports **89**
Exports **89**
Excel Pivot Exports 95
Postal Discount Exports 97
Smart Fields **100**
Creating Smart Fields 100
Smart Field Dependencies 110
Smart Field Processing Order 110
Selections **111**
Creating Selections 111
Selection Criteria Processing Order 115
Selection Processing Order 117
WriteBacks **118**

Publications **123**
Schedules **127**
Data Sources **129**
SQL Server Logins 135
Security **136**

Procedures

Creating and installing an RE:Express data mart 26
Completing the RE:Express General tab 27
Completing the RE:Express Refresh Options tab 28
Completing the RE:Express Export Definition tab 32
Completing the RE:Express Cube Options tab 35
Completing the RE:Express Additional Tables tab 37
Completing the RE:Express Publications tab 38
Adding data from another source to an RE:Express or FE:Express data mart . . 39
Creating and installing an FE:Express data mart 47
Completing the FE:Express General tab 48
Completing the FE:Express Export Definition tab 49
Completing the FE:Express Cube Options tab 53
Completing the FE:Express Raiser's Edge Source tab 54
Completing the FE:Express Additional Tables tab 55
Completing the FE:Express Publications tab 56
Installing a data mart created by Blackbaud 58
Processing a data mart manually 59
Viewing or exporting refresh history for a data mart 60
Adding a dimension 65
Adding a measure 66
Adding a calculated member 67
Creating a parameter 77
Creating a Data View 80
Completing the View General tab 81
Completing the View SQL tab 82
Completing the View Results tab 83
Creating a snapshot table 86
Adding a Monitored Field 88
Creating an export definition 89
Completing the Export General tab 90
Completing the Export Columns tab 91
Completing the Export Options tab 92
Completing the Export Filters tab 94
Completing the Export Pivot Options tab 96
Completing the Export Address Fields tab 98
Completing the Export Postal Discount tab 99
Adding a smart field 101

Completing the smart field General tab 102
Completing the smart field Type tab 103
Completing the smart field Tables tab 104
Completing the smart field Criteria tab 105
Completing the smart field Filter tab 106
Completing the smart field Advanced tab 107
Setting the order in which smart fields are processed 111
Adding a Selection 111
Completing the Selection General tab 112
Completing the Selection Criteria tab. 113
Completing the Selection Results tab. 117
Adding a new WriteBack 118
Completing the WriteBack General tab 119
Completing the WriteBack Query Options tab. 120
Completing the WriteBack Attribute Options tab 121
Completing the WriteBack Filter tab 122
Creating a Publication. 124
Viewing a Publication. 125
Scheduling automatic data mart processing 127
Adding a data source 129
Importing Blackbaud databases automatically 134
Adding database users and setting security access for them 136

Your selections in *Configuration* affect functions, defaults, and settings throughout ***The Information Edge***. Use *Configuration* options to create data marts, set up security rights for access to the data marts, schedule automatic refreshes of data marts, and more. The main areas of *Configuration* are:

Data Marts. Create and manage all aspects of data marts, including cubes, reports, smart fields, WriteBacks, publications, and more.

Data Sources. Specify the ***Raiser's Edge*** and ***Financial Edge*** databases that will be included in your data marts. For more information, see "Data Sources" on page 129.

Schedules. You can specify recurring schedules for when your data marts are refreshed. For more information, see "Schedules" on page 127.

Security. You can add users to ***The Information Edge*** and specify whether they have rights to edit properties for all or specific data marts. For more information, see "Security" on page 136.

Data Marts

Data marts are the central component of ***The Information Edge***. When a data mart is installed, the data is extracted from the source database, transformed for optimum analytical reporting, and loaded into ***The Information Edge***. For optimal analysis, the data mart "flattens" the data before it is stored. For example, data from several source tables may be flattened into one Donor table in ***The Information Edge***.

On the Data Marts tab you can specify all settings related to your data marts, including tables, smart fields, monitored fields, exports, publications and much more.

RE:Express

When processing an *RE:Express* data mart, a "record" refers to a constituent and all related information, including gifts. A constituent with fifteen gifts and five actions would be considered one record when processing the mart.

The *RE:Express* feature of ***The Information Edge*** enables you to bring information into the program based on a ***Raiser's Edge*** export file.

When you install an *RE:Express* data mart, you must define the export file on which to base the data mart. For complete information on creating ***Raiser's Edge*** exports, see the *Query & Export Guide*. For more information about installing an RE:Express data mart, see the following procedure.

➢ **Creating and installing an RE:Express data mart**

1. On the menu bar, select **File**, **New**. Select **Data Mart**, **RE:Express**. The New Data Mart screen appears on the General tab. For information about entering information on the General tab, see "Completing the RE:Express General tab" on page 27.
2. The first time you process a data mart, all records are included. For subsequent processings, you can specify whether you want to refresh all records or only those records that have changed since the last time you processed the mart. For more information, see "Completing the RE:Express Refresh Options tab" on page 28.

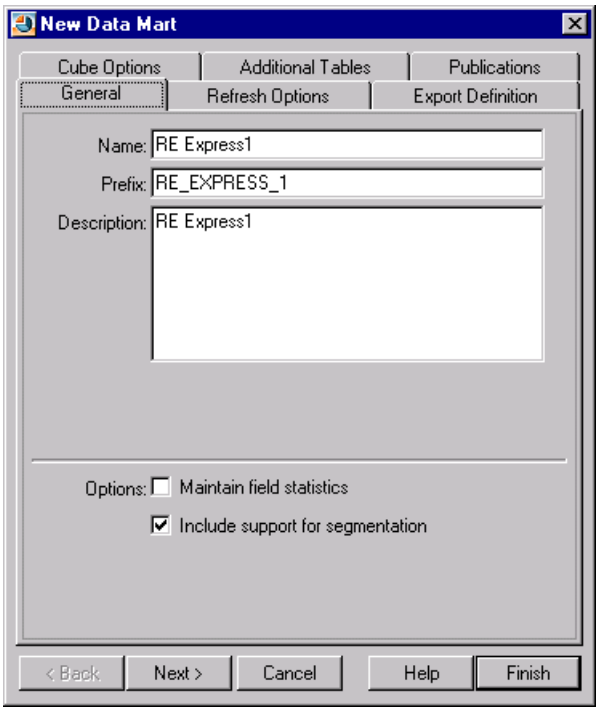
3. You must define the ***Raiser's Edge*** export file on which the data mart data is based. For more information, see "Completing the RE:Express Export Definition tab" on page 32.
4. You can specify options such as whether you want to automatically create cubes and measures in the data mart. For more information, see "Completing the RE:Express Cube Options tab" on page 35.
5. You can add data from other tables to the *RE:Express* data mart. For more information, see "Adding data from another source to an RE:Express or FE:Express data mart" on page 39.
6. After you add exports, WriteBacks, and HTML Publications to a data mart, you can specify that they process automatically whenever the data mart processes. For more information, see "Completing the RE:Express Publications tab" on page 38.
7. When you are finished establishing the properties of your data mart, click **Finish** to install it.

   A message informs you when the data mart is successfully installed. It then appears in the tree view.

   RE:Express data mart tables contain several ID fields that are generated automatically. For more information about these fields, see "BIZINTEL IDs in RE:Express Data Marts" on page 46.

➢ Completing the RE:Express General tab

1. While creating or editing an *RE:Express* data mart, select the General tab.



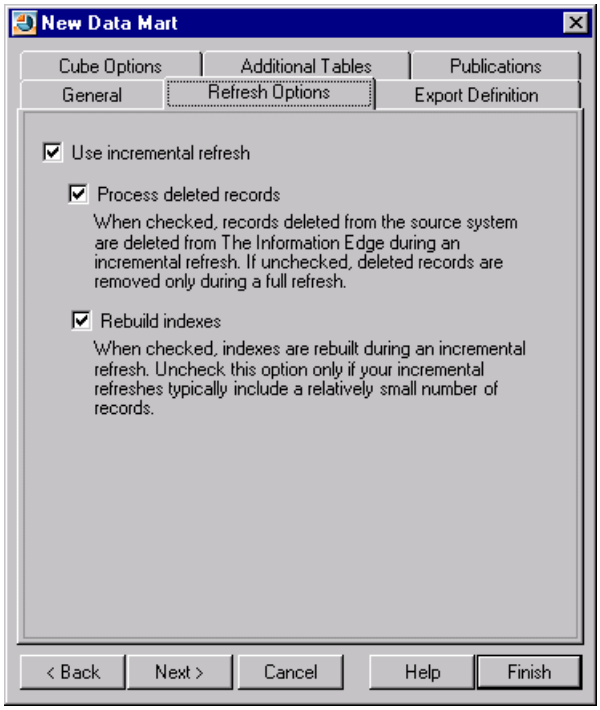
2. Enter a name to display for this data mart in the tree view in the **Data Mart Name** field. Enter a prefix to display with each table entry for this data mart in the **Table Prefix** field. Enter text to describe the data mart in ***The Information Edge*** console in the **Description** field.
3. Mark the **Maintain field statistics** checkbox if you want to view information such as data type, how many instances do and do not contain data, and the number of different values for each field in the mart. Tracking field statistics enables you to determine whether a field is valid for further analysis based on its population.
4. If you have the *Marketing Segmentation* optional module, you can mark the **Include support for Segmentation** checkbox so that the data mart is optimized for use with this module.

   When you mark the checkbox, a cube containing specific dimensions and measures for use with segmentations is created for the data mart. These features enable you to easily create lift charts, and views such as response percent by segment and cumulative response.
5. If you are creating a new data mart, click **Next** to access the Refresh Options tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the RE:Express Refresh Options tab

1. While creating or editing an *RE:Express* data mart, select the Refresh Options tab.


New Data Mart
Cube Options
Additional Tables
Publications
General
Refresh Options
Export Definition
Use incremental refresh
Process deleted records
When checked, records deleted from the source system are deleted from The Information Edge during an incremental refresh. If unchecked, deleted records are removed only during a full refresh.
Rebuild indexes
When checked, indexes are rebuilt during an incremental refresh. Uncheck this option only if your incremental refreshes typically include a relatively small number of records.
< Back
Next >
Cancel
Help
Finish

2. After you install a data mart, you can refresh the data in it manually any time or automatically at scheduled times. For *RE:Express* data marts, if you want to refresh all records in the data mart, leave the **Use incremental refresh** checkbox unmarked. If you want to refresh only records that have changed since the last time you processed the data, mark the checkbox (this is the faster of the two options). For more information about the differences between full and incremental refresh, see "Incremental vs. Full Refresh" on page 30.

   In most cases with an *RE:Express* data mart, you can use an incremental refresh. If, however you select incremental here and later need to run a full refresh, you can change this setting when you schedule refreshes for the data mart.

   For more information about scheduling refreshes for data marts, see "Scheduling automatic data mart processing" on page 127.

3. When you mark the **Process deleted records** checkbox, records deleted from the source system since the last time the mart was processed are deleted from ***The Information Edge*** during an incremental refresh. If you unmark the checkbox, deleted records are removed only during full refreshes.

   Marking the checkbox ensures that your ***Information Edge*** data always reflects the current data in ***The Raiser's Edge***. For example, if you have a constituent who gave three gifts and you compute an average, if one of the gifts is deleted in ***The Raiser's Edge*** and you do not mark this checkbox, the deleted gift would still be factored into the average in ***The Information Edge*** so the figure would no longer be correct. However, identifying deleted records is time consuming. If you typically do not have many deleted records in your ***Raiser's Edge*** data, you will probably want to unmark the checkbox to reduce the processing time of your data marts during incremental refreshes.

4. When you mark the **Rebuild indexes** checkbox, indexes are dropped and then rebuilt during an incremental refresh. You should leave this checkbox marked unless your incremental refreshes typically include a relatively small number of records.

   When you mark the checkbox, indexes are dropped before processing. With the indexes dropped, data inserts are faster, but all the indexes must be rebuilt. Without dropping them, inserts are slower, but you save the time needed to rebuild the indexes.

   If the data mart takes a long time to refresh, and the **Messages** frame shows that the indices took as much time to create as the tables did to refresh, you may want to consider unmarking this checkbox.

5. If you are creating a new data mart, click **Next** to access the Export Definition tab. For more information about this tab, see "Completing the RE:Express Export Definition tab" on page 32.

   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

We recommend you run incremental refreshes often to include frequently changing information such as gift and biographical information, as well as new records, in your data marts. You should also occasionally run full refreshes to include data that changes less frequently (fund names or code table descriptions for example).

Even when **Rebuild indexes** is not marked, you may see an "Adding Indexes status" message during a data mart refresh. The status almost always displays while the system checks to see whether any indexes are missing.

Incremental vs. Full Refresh

A full refresh processes all records in the data mart. An incremental refresh processes only those records that have changed since the last time you processed the data. In most cases, you can use an incremental refresh when available; however, in some specific situations, a full refresh is necessary.

When is a Full Refresh Needed?

When a change is made to the structure of a database column which is used in an ***Information Edge*** data mart, the changed column is dropped and re-added to the data mart in order to update the structure. When this happens, all values in that column are set to NULL.

When you perform a Full Refresh, all values in the table are updated and the NULL values are updated to the latest information. However, if you perform an incremental refresh, records that have not been edited since the last refresh are not updated and contain NULL in any fields whose structure has changed.

New versions of Blackbaud products often contain changes to the database structure. Therefore you should always perform a full refresh after updating ***The Raiser's Edge***, ***The Financial Edge***, ***The Education Edge***, or any other Blackbaud products that you use in your Data Marts to ensure that all fields have the latest structure and values.

Some other examples of when you would want to run a full refresh include:

- If you have used the ***Raiser's Edge*** table entry cleanup utility to remove inconsistencies in your entries (such as "St." versus "Street"), or otherwise changed the descriptions of your code tables. Or, if you used the ***Raiser's Edge*** financial institution cleanup utility.
- If you change the name of fields or tables.
- If you perform a global change or import in ***The Raiser's Edge***.
- If you edit the export on which the data mart is based.
- If you specify a different data source for the data mart

The Raiser's Edge Date_Last_Changed

Full refreshes are actually needed rarely. For example, if you change a fund's description, the Date_Last_Changed flag in the database is set for the fund record, but it is not set for every gift associated with that fund. The gifts have not changed at all, only some of the details about the fund to which they are linked. Therefore, gifts that have already been brought into the data mart would not see their Fund name change until the next full refresh. However, if you globally change gifts to replace Fund A with Fund B instead of renaming the fund, the change is recorded on the Gifts and they will be included in an incremental update.

Similarly, if you import new constituent addresses to numerous existing records, or globally add an attribute to 100,000 constituents, those changes are detected and the updated records brought into the data mart.

To understand what records are updated during an incremental refresh, it helps to know:

- What causes a timestamp to be updated in ***The Raiser's Edge*** database
- What timestamps ***The Information Edge*** examines

The DATE_LAST_CHANGED field on the records table is updated in the following circumstances:

- Any change is made to the data stored in the RECORDS table. Mostly this is Biographical information from Bio 1, Bio2, Org 1, and Org 2 tabs.
- Any new record is added.
- Any change to related one-to-many data that is not a top level entity. Such as notepads, attributes, aliases, credit cards, addresses, phones, etc.

Essentially, when a Constituent record is opened and anything in it is changed, once **Save** is clicked, the timestamp is updated. Both Global Change and Import also follow these same rules. This also applies to timestamps for all other records such as Gifts, Actions, Events, and Memberships. For example, if you add, remove, or change a gift attribute, or soft credit a gift, the timestamp on the gift record is updated.

The only changes that can be made that do not affect timestamps are when things like code tables or campaign, fund, or appeal names change on the actual entity itself. For example, if you change a title from "Dr." to "Mr." on the record, that updates the timestamp. However, if you change the code table itself in ***The Raiser's Edge*** *Configuration* from something like "Dr." to "Doctor," that is not recorded as a change on the RECORDS table.

How The Information Edge Determines Whether a Record has Changed

A "changed" record from the standpoint of ***The Information Edge*** is one that is new, deleted, or has a changed timestamp on any of the following tables related to it

- RECORDS table (which would include both BIO or ORG info and related items such as notepads and phones)
- Related GIFT records
- Related Events Participation records
- Related Action records
- Related Membership records

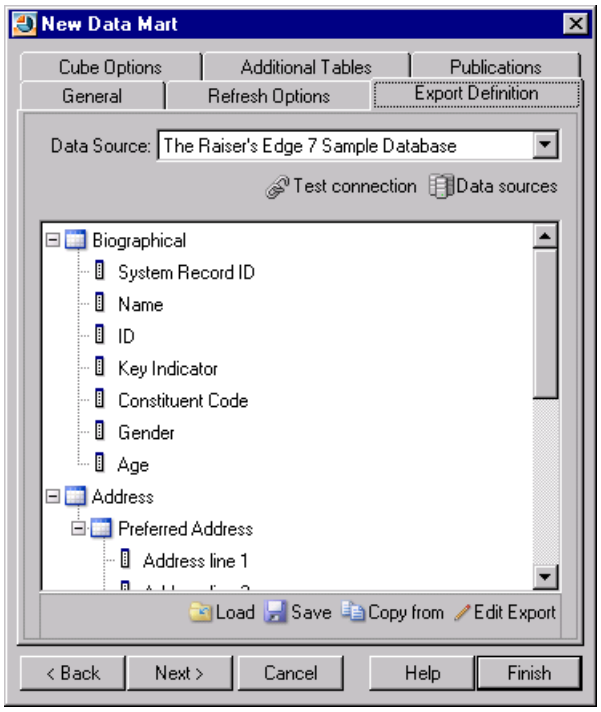
So, for example, if you change an attribute on a GIFT record, that causes the GIFTs timestamp to be updated. Therefore, ***The Information Edge*** considers the Constituent to be changed and brings the latest version over to the data mart as part of an incremental update.

When ***The Information Edge*** detects any of these changes, it brings over all the selected information for the Constituent, not just the piece that changed. The end result is that the current view of the Constituent in ***The Information Edge*** is synchronized with the current view of the Constituent in ***The Raiser's Edge***.

Completing the RE:Express Export Definition tab

When installing an *RE:Express* data mart, you must define a ***Raiser's Edge*** export file on which the data mart data is based. For more information about creating exports, see the "Export" chapter of the ***The Raiser's Edge*** *Query & Export Guide*.

1. While creating or editing an *RE:Express* data mart, select the Export Definition tab.



2. Select the ***Raiser's Edge*** database from which you want to create the data mart in the **Data Source** field. You can test the connection to a specified source or view all available ***Raiser's Edge*** data sources.

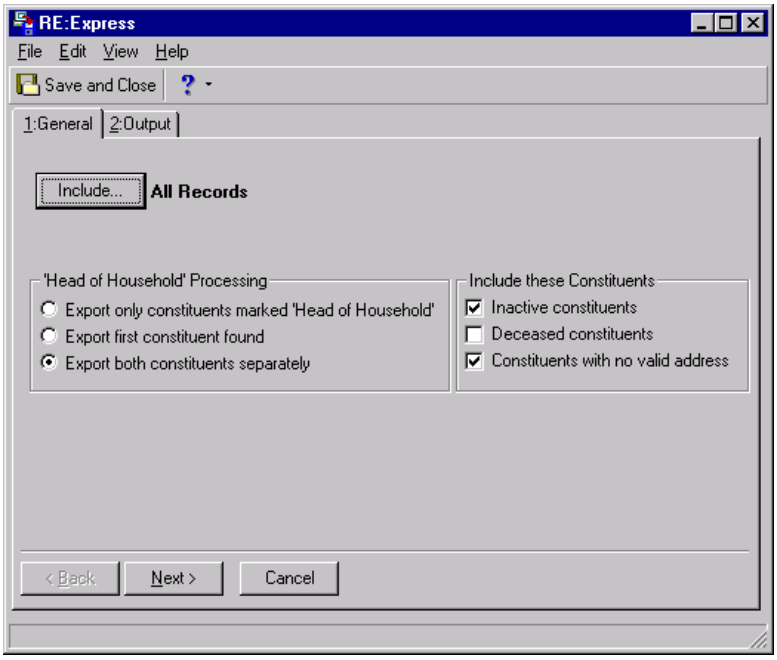
   For more information about viewing and adding data sources, see "Data Sources" on page 129.

3. The default fields included in the data mart appear on the screen. If you want to use an export you already defined in another *RE:Express* data mart, click **Copy from**.

   Click **Save** to save the export as a file, or **Load** to use an export you previously saved as a file. You may want to save an export as a file if you plan to use it in other data marts, so that instead of recreating the export, you can load the saved file.

You can optimize the speed of your data by using smart fields to perform operations such as "first gift" and "last gift" after you create the data mart, rather than including them in the export from ***The Raiser's Edge***.

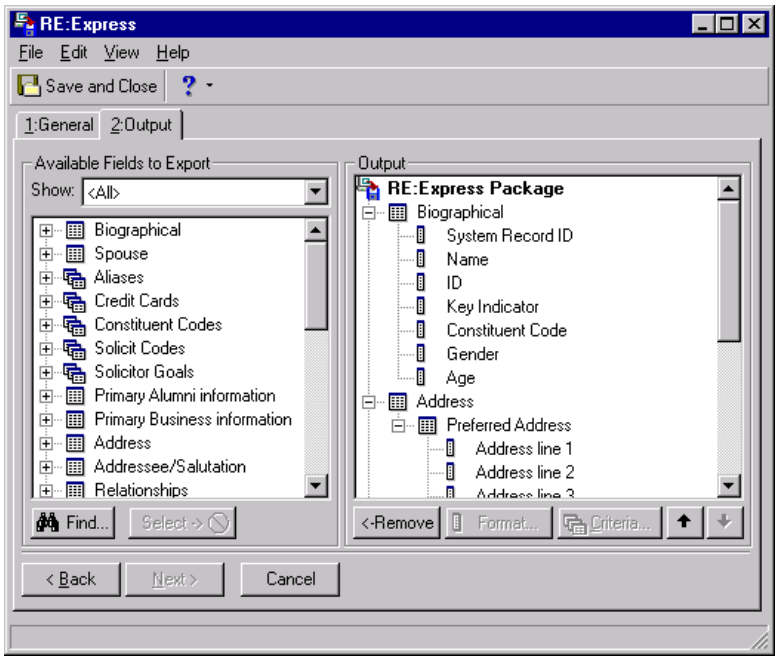
4. To edit or add fields, click **Edit Export** (on the lower right of the screen). The export parameter tabs appear.



The export parameter tabs include the same options as those for creating an export from ***The Raiser's Edge***. For more information about these tabs, see the *Query & Export Guide*.

5. On the General tab, determine which records you want to consider for your export. You can choose to use all records from your database, selected records from your database using a query, or one record from your database. Determine how you want to process individuals marked as Head of Household and whether inactive, deceased, or constituents with no valid address should be included in the export.

6. Select the Output tab.

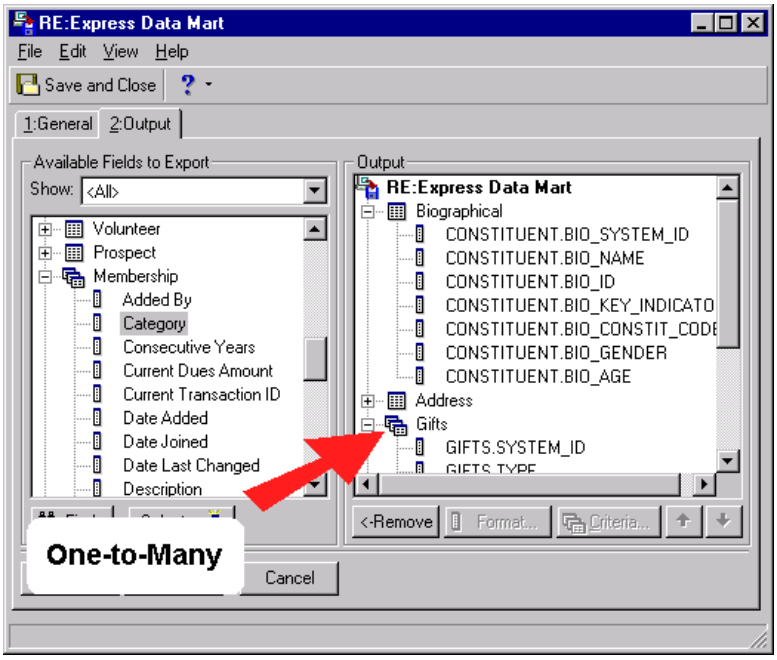


7. On the Output tab, select the fields containing the data you want to include in your export. The **Available Fields to Export** box displays a list of all fields available for your export. The **Output** box displays the fields you select for your export. You can also select formatting for certain output fields.

   Additionally, from the **View** menu, you can select **Export Field Names**. This changes the display in the **Output** box to show the actual field names as they appear in the database tables (which is how they will appear in ***The Information Edge***).

When you select to include certain top level records such as campaigns, funds, or appeals in the data mart, the Selected Records screen appears and you are prompted to select the records you want to include. You can select all current records by clicking the double arrow button. Remember that this includes all *current* records. If you later add another record of this type in ***The Raiser's Edge*** and want it to appear in the data mart, you will need to edit the export to include it.

In either view, an icon indicates tables that have a one to many relationship with the constituent.



8. To save your export settings and return to the Export Definition tab, click **Save and Close**.
9. If you are creating a new data mart, click **Next** to access the Cube Options tab. For more information about this tab, see the next procedure.

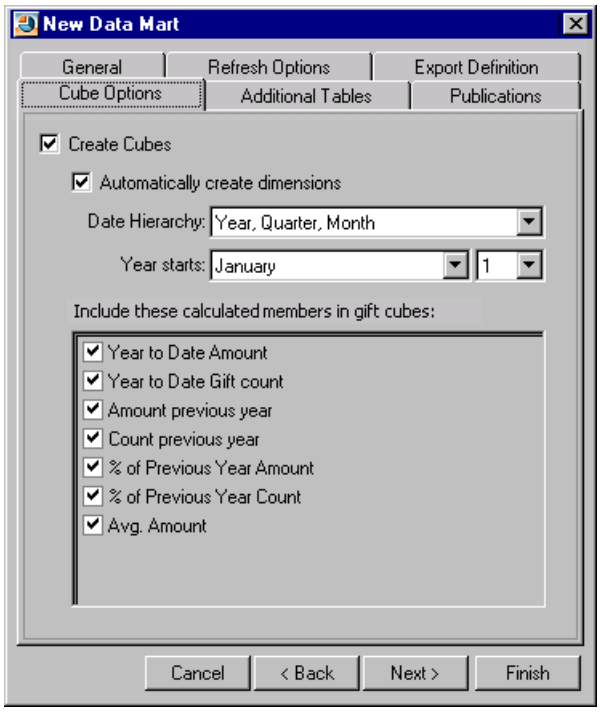
   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the RE:Express Cube Options tab

1. While creating or editing an *RE:Express* data mart, select the Cube Options tab.

Do not use the Long Date Format for any export date fields. Long dates are stored as VarChar format in ***The Information Edge***; therefore, no date calculations can be performed on long dates. Additionally, if you edit export properties and change a date format to long, existing smart fields and segmentations which rely on the **Date** field are impacted.

2. On the Export Definition tab, click **Next**. The Cube Options tab appears.



3. To take full advantage of all features in ***The Information Edge***, mark the **Create Cubes** checkbox. The only time you may want to unmark this checkbox is if you do not intend to use this data mart with any of ***The Information Edge*** interactive features; for example, you may intend to use the data only in *Crystal Reports*, not in Charts or Pivot Tables. If you unmark the **Create Cubes** checkbox, none of the other options on this tab are available.

4. If you want to create dimensions, mark the **Automatically create dimensions** checkbox. In an *RE:Express* data mart, dimensions are any code table included in the export file. Creating the dimensions now gives you flexibility in your reports later and saves you the time of adding them manually.

5. Select a **Date Hierarchy** to determine how date dimensions nest in the cube and appear in reports. Specify when the **Year starts** for your organization. For example, if your fiscal year begins March 1, you can enter that information here.

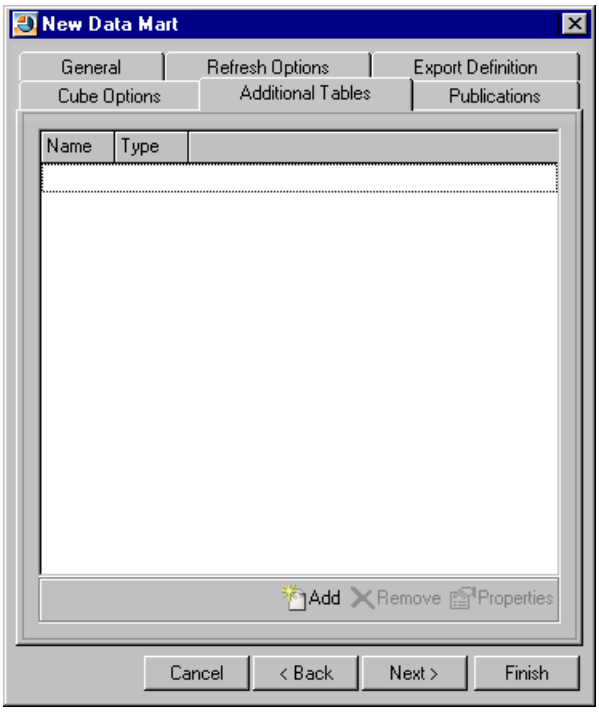
6. Select the numeric values you want to measure in the **Include these calculated members in gift cubes** box. If you decide not to include some of these at this time, you can add them later in ***The Information Edge*** console.

7. If you are creating a new data mart, click **Next**. The Additional Tables tab appears. For more information about adding data from other tables to an *RE:Express* data mart, see “Adding data from another source to an RE:Express or FE:Express data mart” on page 39.

   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the RE:Express Additional Tables tab

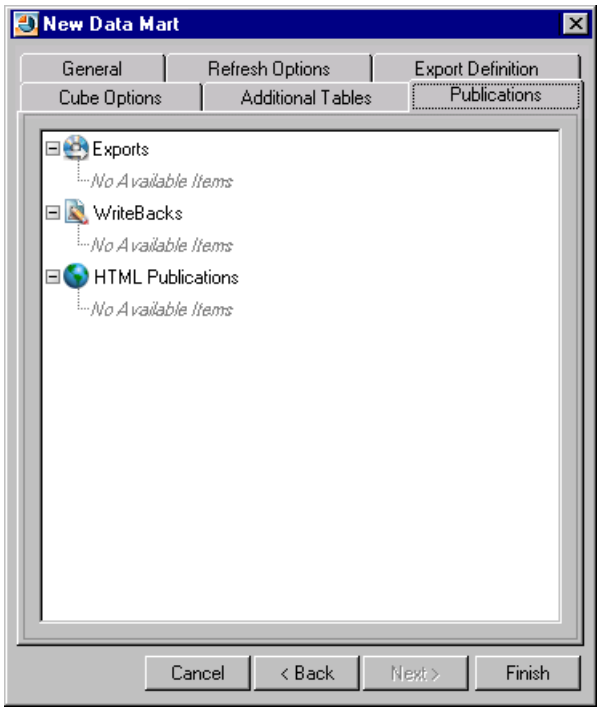
1. While creating or editing an *RE:Express* data mart, select the Additional Tables tab.



2. To add a new data source, click **Add**. The Create Table or Append Data screen appears. For information about how to complete the Create Table or Append Data screens, see “Adding data from another source to an RE:Express or FE:Express data mart” on page 39.
3. When you complete the Create Table or Append Data screens and return to the Additional Tables tab, **Name** and **Type** of the additional data source appears.
4. If you are creating a new data mart, click **Next** to access the Publications tab. For more information about this tab, see the next procedure.
5. If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the RE:Express Publications tab

1. While creating or editing an *RE:Express* data mart, select the Publications tab.



   If you are creating a data mart, no items are available for processing yet. If you are editing an existing mart, any exports, *WriteBacks*, and HTML Publications, you have created are available as checkboxes. Specify which of these items you would like to process automatically when the data mart is processed.

   When you create exports or HTML Publications on a client machine, you can specify an output path on the client machine. However, because the Schedule function runs on the server, it attempts to output the HTML Publication or export to the specified output path on the server. If the path does not exist on the server, the HTML Publication or Export fails.In this case, you need to create the same path on the server to enable the export or HTML Publication to process.

2. If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs. If you are creating a new data mart, click **Finish** to install the data mart.

   A message informs you when the data mart is successfully installed. It then appears in the tree view.

   RE:Express data mart tables contain several ID fields that are generated automatically. For more information about these fields, see “BIZINTEL IDs in RE:Express Data Marts” on page 46.

You cannot automatically process *Postal Discount* exports as part of a data mart refresh. For more information, see “Postal Discount Exports” on page 97.

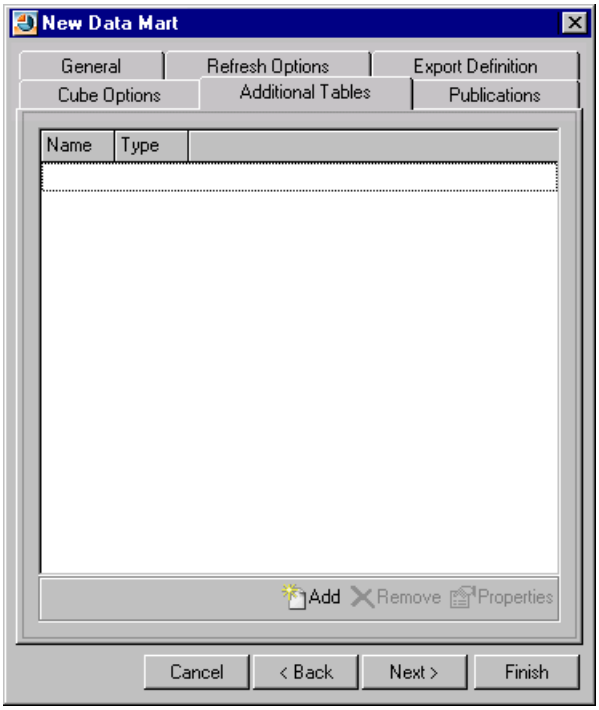
Adding Data from Other Tables to an RE:Express or FE:Express Data Mart

You can include data from sources and tables outside ***The Raiser's Edge*** or ***Financial Edge*** in *Express* data marts.

You have the choice of adding data as a new table in the data mart, or appending data from another source to a ***Raiser's Edge*** or ***Financial Edge*** table in the data mart. You can add data in CSV, *Access*, *Excel*, and *SQL Server* formats.

➢ **Adding data from another source to an RE:Express or FE:Express data mart**

1. Select the Additional Tables tab when creating or editing an *RE:Express* or *FE:Express* data mart.



2. To add a new data source, click **Add**. The Create Table or Append Data screen appears.

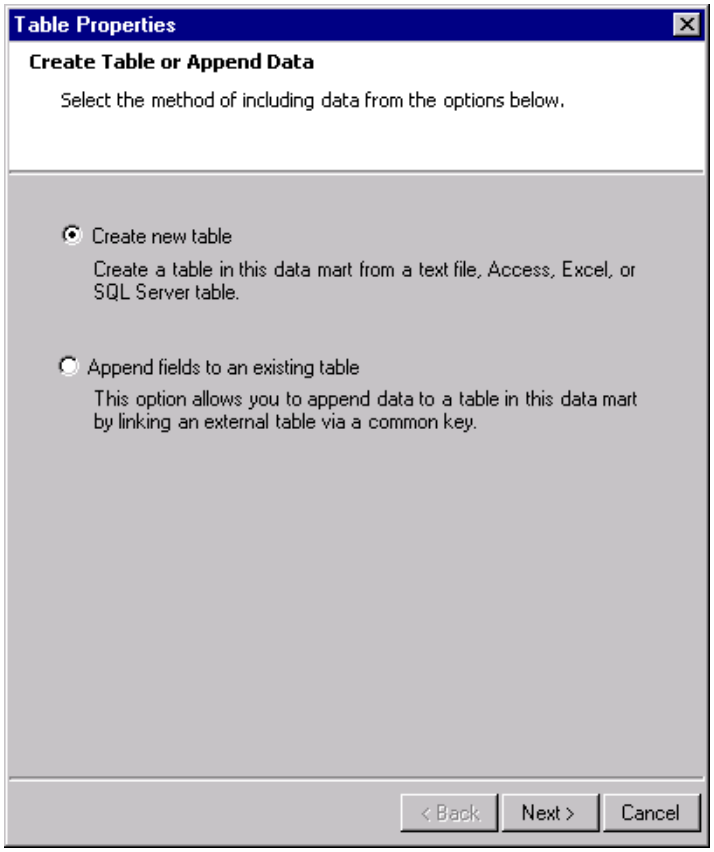


Table Properties
Create Table or Append Data
Select the method of including data from the options below.
Create new table
Create a table in this data mart from a text file, Access, Excel, or SQL Server table.
Append fields to an existing table
This option allows you to append data to a table in this data mart by linking an external table via a common key.
< Back
Next >
Cancel

3. When you select the **Create new table** option, a new table is created in the data mart from the source you will specify in later steps. Later, you can also optionally specify to create a relationship between this table and another table in the mart.

   If you select the **Append fields to an existing table** option, you will specify a common key to add a table from another source to a table you export from ***The Raiser's Edge*** or ***Financial Edge***.

   The key field is a field in both tables that share the same value. It is the common value that links the two tables.

4. Click **Next**. The Data Source screen appears.

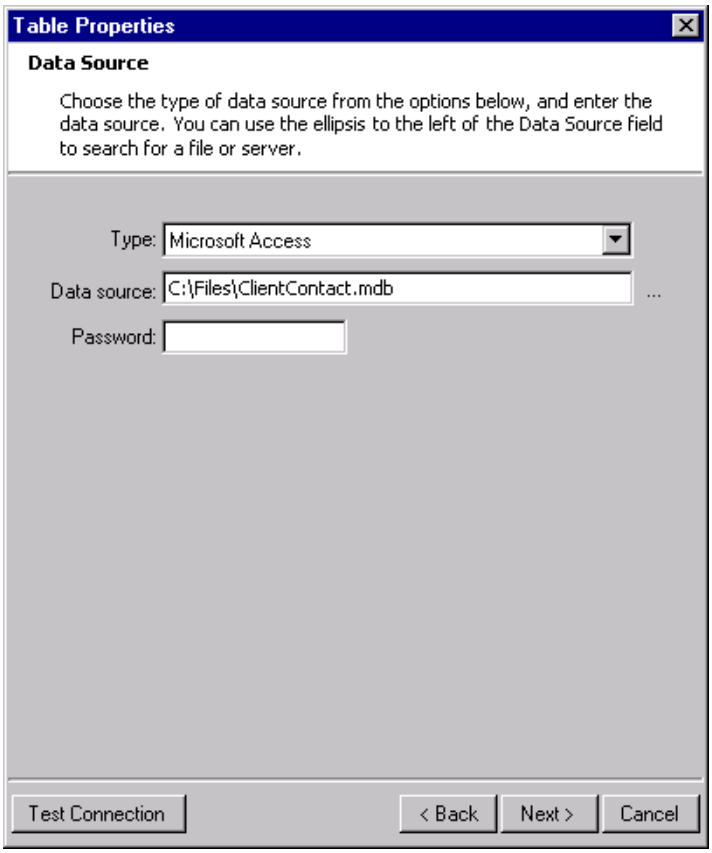


Table Properties
Data Source
Choose the type of data source from the options below, and enter the data source. You can use the ellipsis to the left of the Data Source field to search for a file or server.
Type:
Microsoft Access
Data source:
C:\Files\ClientContact.mdb
...
Password:
Test Connection
< Back
Next >
Cancel

5. Select the **Type** of data you want to add. Browse to the location of the file or server containing the data, and select it in the **Data Source** field.

   If you select an *Access* database that requires a password for entry, enter the **Password**.

   If you select a *SQL Server* database, specify whether ***The Information Edge*** should connect to the server using **Windows NT authentication** or **SQL Server authentication**. If you select **SQL Server authentication**, specify the **User name** and **Password**.

6. Click **Next**. The Tables screen appears. If you selected to append data to an existing table, skip to step 8 of this procedure. If you selected to add a new table, proceed to the next step.

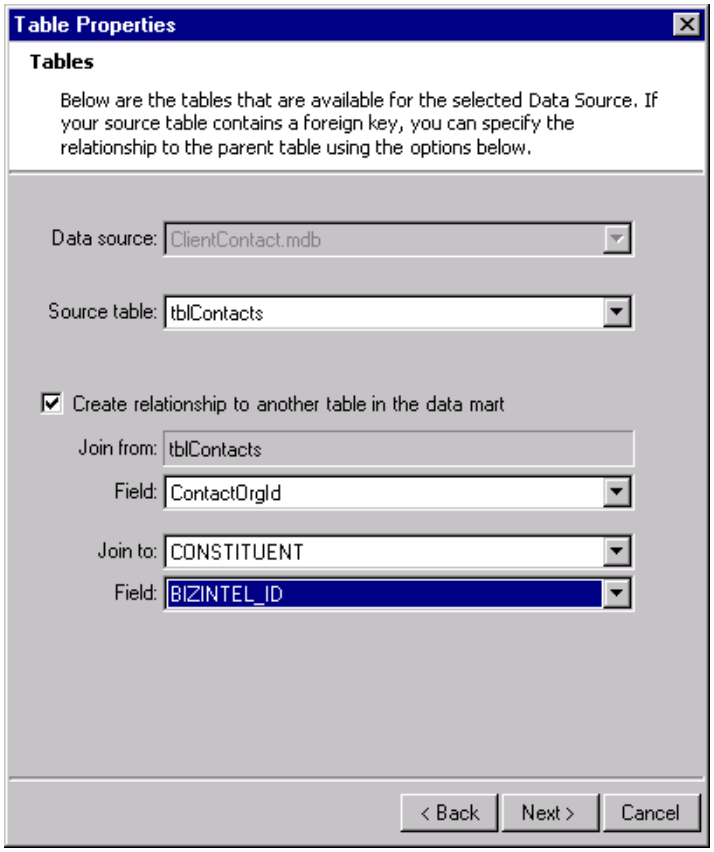


Table Properties
Tables
Below are the tables that are available for the selected Data Source. If your source table contains a foreign key, you can specify the relationship to the parent table using the options below.
Data source: ClientContact.mdb
Source table: tblContacts
Create relationship to another table in the data mart
Join from: tblContacts
Field: ContactOrgId
Join to: CONSTITUENT
Field: BIZINTEL_ID
< Back
Next >
Cancel

If an *Excel* spreadsheet data source contains named ranges, they appear as tables in the **Source table** field.

7. The **Data source** you selected previously appears. Select the **Source table** from which you want to add data to the mart. If your source data is a CSV or *Excel* file, the **First row contains field names** checkbox is available. You can mark the checkbox to indicate that the first row of the file contains the names of fields rather than data.

   If the source table you are adding contains a foreign key with which you want to define a relationship to the parent table in the mart, mark the **Create relationship to another table in the data mart** checkbox.

A foreign key establishes relationships between tables. It has the same value as the primary key in another related table. A foreign key can be in a many-to-one relationship with a primary key.

   The source table appears in the **Join from** field. Select a **Field** from the source table, and in the **Join to** field, specify the table in the data mart with which you want to join, and specify the specific **Field** in that table.

   The newly added table includes a system generated BIZ_INTEL_ID column as the primary key. If you specify a relationship, the BIZINTEL_JOINKEY column is also created with the same type as the primary key on the parent table.

   When you complete this screen, proceed to step 10 of this procedure.

8. If you selected to append data to an existing table, the Tables screen appears as follows.

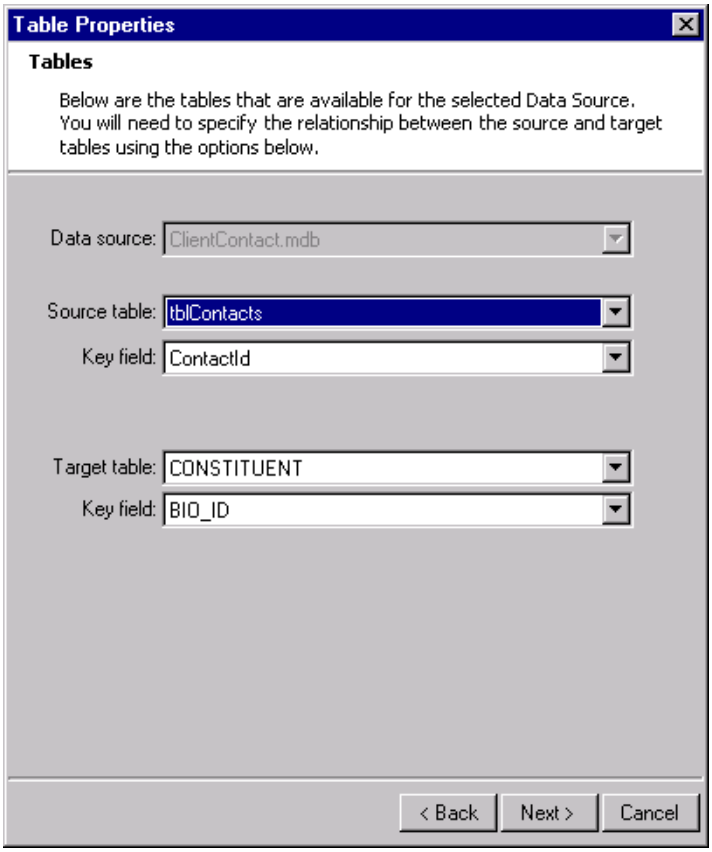


Table Properties
Tables
Below are the tables that are available for the selected Data Source. You will need to specify the relationship between the source and target tables using the options below.
Data source: ClientContact.mdb
Source table: tblContacts
Key field: ContactId
Target table: CONSTITUENT
Key field: BIO_ID
< Back
Next >
Cancel

9. The **Data source** you selected previously appears. You need to define the relationship between a source table and the target table to which you are appending it.

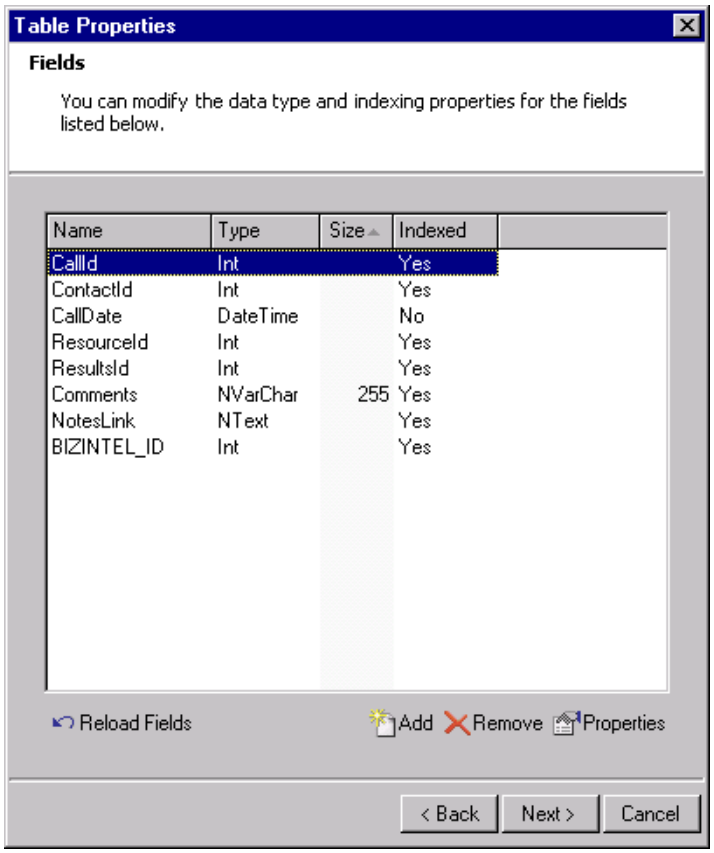
   If your source data is a CSV or *Excel* file, the **First row contains field names** checkbox is available. You can mark the checkbox to indicate that the first row of the file contains the names of fields rather than data.

   Select the **Source table** from which you want to add data to the mart, and the **Key field** from the source table you want to use link with the target table in the mart. The key field is a field in both tables that share the same value. It is the common value that links the two tables.

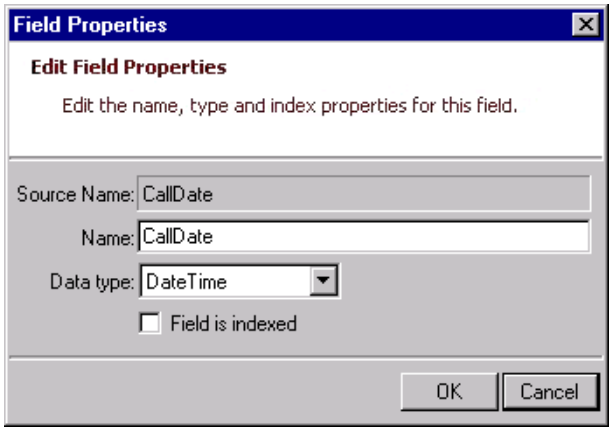
   Select the **Target table** in the data mart to which you want to append the data from the new table and specify the **Key field**.

If an *Excel* spreadsheet data source contains named ranges, they appear as tables in the **Source table** field.

10. Click **Next**. The Fields screen appears.



11. You can add or remove fields so they are not included in the data mart. Additionally, when you select a field and click **Properties**, the Edit Field Properties screen appears.

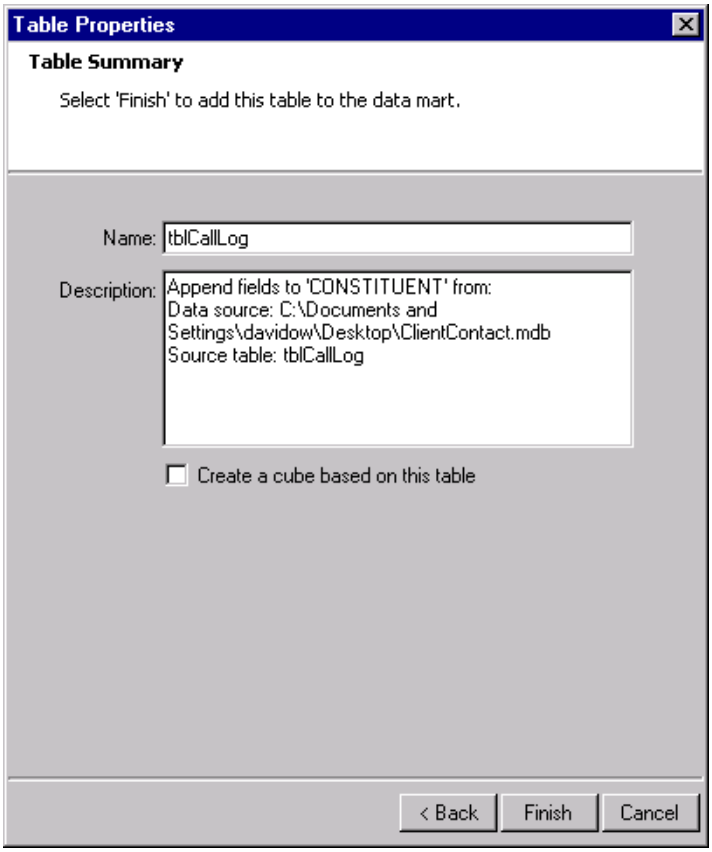


12. You can change the **Name** or **Data type** and specify whether the field in indexed or not. Indexing provides fast access to data in the rows of a table, based on key values. You may want to specify that certain fields, are not indexed so the data mart will refresh faster.

You may need to edit the **Data Type** for some fields. For example, when linking data from an *Excel* or CSV file, ***The Information Edge*** makes assumptions about the data type of each field based on the first few rows. If, for example, a field contains integers in the first few rows, but includes strings in other rows, an error will occur when the data mart is refreshed. Other combinations of data types could also cause errors. To avoid this, for fields that include values of different types, you must select a **Data Type** that includes all the values.

Click **OK** to return to the Fields screen.

13. Click **Next**. The Table Summary screen appears.



14. If you specified earlier to create a new table based on the outside data source, the **Create a cube based on this table** checkbox is available. In most cases you should mark this checkbox so you can easily report on and analyze the data.

    The only time you may want to not mark this checkbox is if you do not intend to use this information with any of ***The Information Edge*** interactive features; for example, you may intend to use the data only in *Crystal Reports*, not in Charts or Pivot Tables.

15. Click **Finish** to complete adding the table to the data mart. You return to the Additional Data Sources tab where the new source now appears. You can add another source, or finish creating or editing the data mart at this time.

For more information about the available data types, see your *SQL Server* documentation.

BIZINTEL IDs in RE:Express Data Marts

Several ID fields are generated automatically in every table created in an RE:Express data mart. All these fields have a name that begins with "BIZINTEL."

BIZINTEL_ID. This is always the Primary Key of the table. It is a system generated ID with no relation to any records defined in ***The Raiser's Edge***. It can be considered as a unique identifier of the row in the table.

BIZINTEL_PARENTID. This is always the Foreign Key field that points to the BIZINTEL_ID in the parent table. This field appears only on a table with a one-to-many relationship to another table. For example, the CONSTITUENT table never has this field because it is the "root" and is not a child to any other table. All other tables have this field because all have a one-to-many relation with either the CONSTITUENT table or another table.

BIZINTEL_RERECORSDID. This is always the ***Raiser's Edge*** System Record ID of the constituent record to which this row is related. In the CONSTITUENT table, it is the System Record ID of the constituent. In the GIFTS table, it is the

System Record ID of the constituent who made the gift. In the GIFT_INSTALLMENTS table it is the System Record ID of the constituent who made the gift for which this is an installment.

In ***The Raiser's Edge***, the System Record ID is the Primary Key of the RECORDS table - dbo.RECORDS.ID. The ID is system generated; it is not the user-defined ID that appears on the Bio 1 tab of the constituent record. To view the System Record ID from a constituent record in ***The Raiser's Edge***, select **File**, **Properties** from the menu bar. The System Record ID, Import ID, and date added/changed display. This field is also usually available in *Query* and *Export* as a field named System Record ID.

BIZINTEL_REID. This is the System Record ID of the respective record type from ***The Raiser's Edge***. This field does not appear on the CONSTITUENT table because it would be redundant with the BIZINTEL_RERECORSDID. However, it appears on all other tables. In the GIFT table it is the gift's System Record ID.

You will probably never need to use the two IDs related to ***The Raiser's Edge*** system record ID (BIZINTEL_RERECORSDID and BIZINTEL_REID). They exist mainly to enable incremental processing. However, you may use the BIZINTEL_ID and BIZINTEL_PARENTID fields because they are the Primary Key and Foreign Key used in any JOIN or subquery expression to join tables. For more information about using subqueries to join tables, see "Expression Smart Field Examples" on page 296.

FE:Express

The *FE:Express* feature of ***The Information Edge*** enables you to bring information into the program from a ***Financial Edge*** database.

When creating an *FE:Express* data mart, ***The Information Edge*** scans your system to determine which ***Financial Edge*** components are available, and presents an export screen to help you define the fields you want to export from each of these components. The export options are very similar to those in ***The Financial Edge***; however, certain options may differ slightly in ***The Information Edge***. For more information, see "Completing the FE:Express Export Definition tab" on page 49.

For more information about installing an *FE:Express* data mart, see the following procedure.

➢ Creating and installing an FE:Express data mart

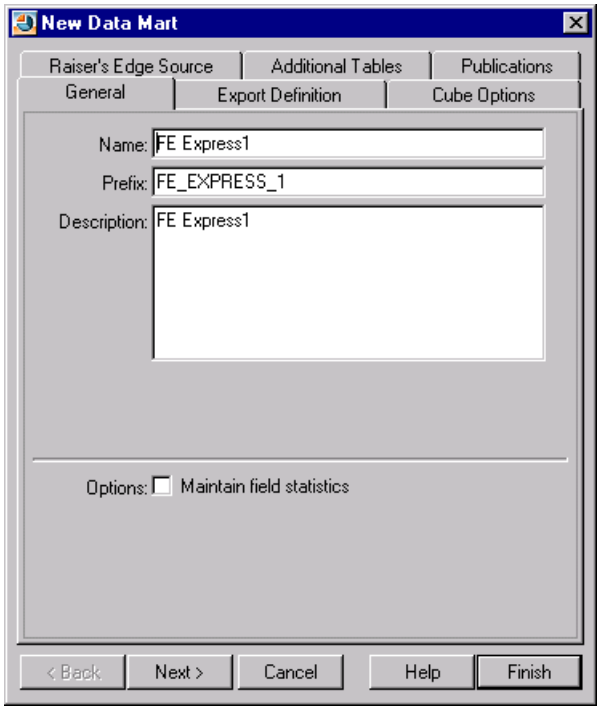
1. On the menu bar, select **File**, **New**. Select **Data Mart**, **FE:Express**. The New Data Mart screen appears on the General tab. For information about entering information on the General tab, see "Completing the FE:Express General tab" on page 48.
2. You must define the ***Financial Edge*** export file on which the data mart data is based. For more information, see "Completing the FE:Express Export Definition tab" on page 49.
3. You can specify options such as whether you want to automatically create cubes and measures in the data mart. For more information, see "Completing the FE:Express Cube Options tab" on page 53.
4. You can specify a relationship between an *RE:Express* data mart when creating an *FE:Express* data mart. This enables you to later pull ***Raiser's Edge*** constituent and gift information onto the Transactions table for each transaction. For more information, see "Completing the FE:Express Raiser's Edge Source tab" on page 54.
5. You can add data from other tables to the *FE:Express* data mart. For more information, see "Adding data from another source to an RE:Express or FE:Express data mart" on page 39.
6. After you add exports, and HTML Publications to a data mart, you can specify that they process automatically whenever the data mart processes. For more information, see "Completing the FE:Express Publications tab" on page 56.
7. When you are finished establishing the properties of your data mart, click **Finish** to install it.

   A message informs you when the data mart is successfully installed. It then appears in the tree view.

   FE:Express data mart tables contain several ID fields that are generated automatically. For more information about these fields, see "BIZINTEL IDs in FE:Express Data Marts" on page 57.

➢ Completing the FE:Express General tab

1. While creating or editing an *FE:Express* data mart, select the General tab.



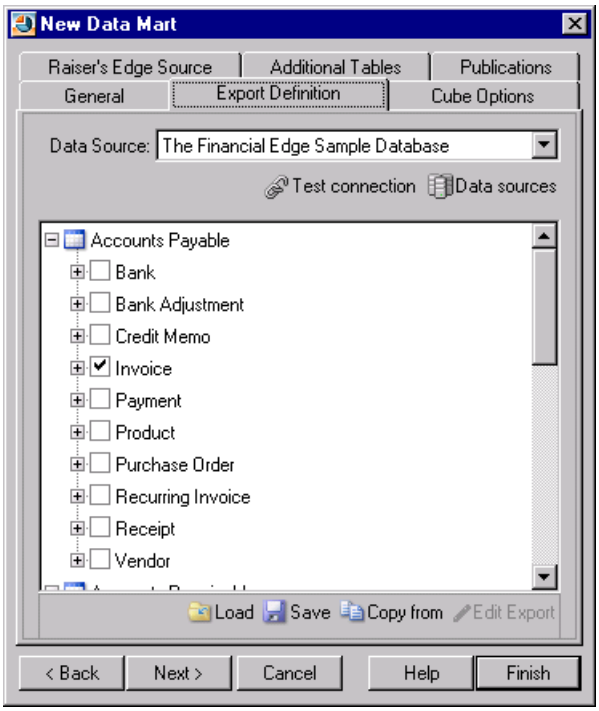
2. Enter a name to display for this data mart in the tree view in the **Data Mart Name** field. Enter a prefix to display with each table entry for this data mart in the **Table Prefix** field. Enter text to describe the data mart in ***The Information Edge*** console in the **Description** field.
3. Mark the **Maintain field statistics** checkbox if you want to view information such as data type, how many instances do and do not contain data, and the number of different values for each field in the data mart. Tracking field statistics enables you to determine whether a field is valid for further analysis based on its population.
4. If you are creating a new data mart, click **Next** to access the Export Definition tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the FE:Express Export Definition tab

When installing an *FE:Express* data mart, you must define a ***Financial Edge*** export file on which the data mart data is based. For more information about creating exports, see ***The Financial Edge*** *Export Guide*.

1. While creating or editing an *FE:Express* data mart, select the Export Definition tab.



2. Select the ***Financial Edge*** database from which you want to create the data mart in the **Data Source** field. You can test the connection to a specified source or view all available ***Financial Edge*** data sources.

   For more information about viewing and adding data sources, see “Data Sources” on page 129.

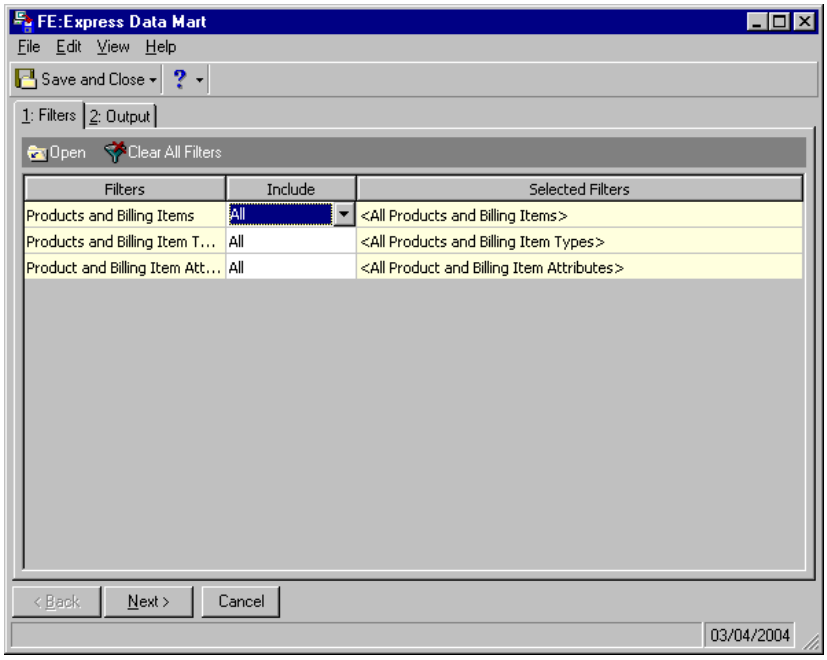
3. The available export types appear as checkboxes on the screen. Each checkbox represents a separate export. The default exports included in the data mart are checked. Click the plus sign beside an export type to expand it and view the fields and tables included in it. The export fields are grouped by export type available within each product in ***The Financial Edge*** suite.

   If you want to use an export you already defined in another *FE:Express* data mart, click **Copy from**.

   Click **Save** to save the export as a file, or **Load** to use an export you previously saved as a file. You may want to save an export as a file if you plan to use it in other data marts, so that instead of recreating the export, you can load the saved file.

At least one checkbox must be marked under a product to enable editing the export for it.

4. To edit or add fields for a particular export, mark the checkbox for it and click **Edit Export** (on the lower right of the screen). The export parameter tabs for the tables in that particular export appear.



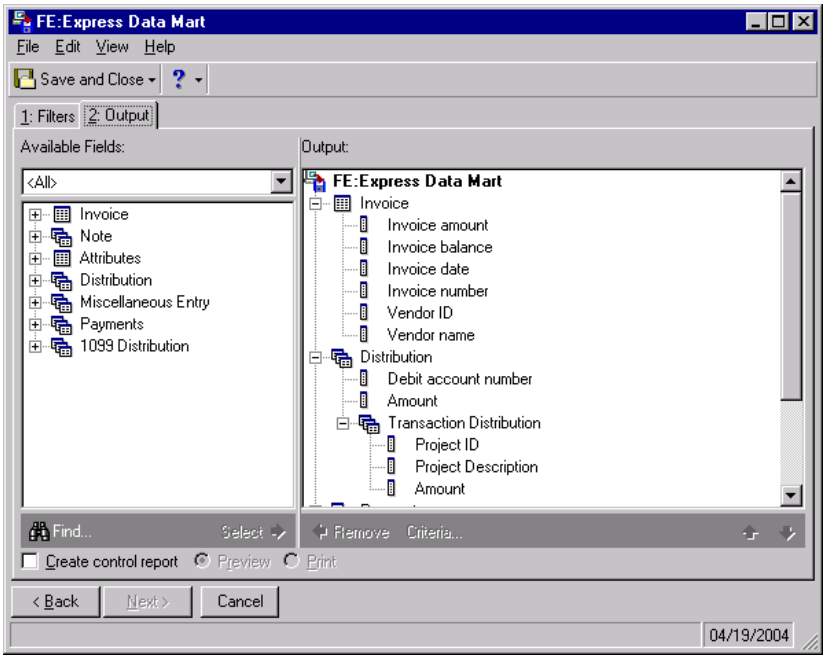
   The export parameter tabs include the same options as those for creating an export from ***The Financial Edge***. For more information about these tabs, see the *Financial Edge Export Guide* or press **F1** on your keyboard from either of the tabs.

   Although the export parameter tabs are essentially the same here as when they are accessed from within ***The Financial Edge***, for a given export type, all the fields that are available from within ***The Financial Edge*** may not be available in the export you are creating from within ***The Information Edge***. This is because some fields may be available in a different node.

   For example, if you create an export directly from ***The Financial Edge*** for Projects, transactions are available to include in the export. However, in ***The Information Edge***, **Projects** and **Transactions** appear as separate checkboxes under **General Ledger**. When you edit the Project export settings, transactions are not available there because all transactions are available for export by selecting that checkbox. If they were available in both places, you could potentially have duplicate information in the data mart. When the data mart is created, ***The Information Edge*** automatically creates any necessary relationships between the tables (in this case the relationship between the PROJECT and TRANSACTIONS tables).

5. On the Filters tab, determine which records you want to consider for your export. You can choose to use all records from your database or selected records from your database using a query.

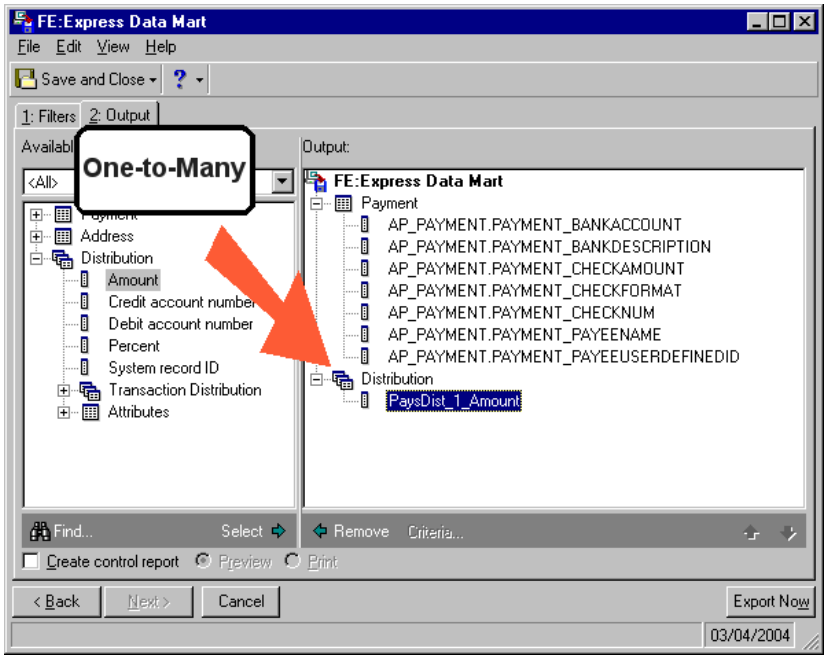
6. Select the Output tab.



7. On the Output tab, select the fields containing the data you want to include in your export. The **Available Fields** box displays a list of all fields available for your export. The **Output** box displays the fields you select for your export.

   Additionally, from the **View** menu, you can select **Export Field Names**. This changes the display in the **Output** box to show the actual field names as they appear in the database tables (which is how they will appear in ***The Information Edge***).

In either view, an icon indicates tables that have a one-to-many relationship with the parent table.

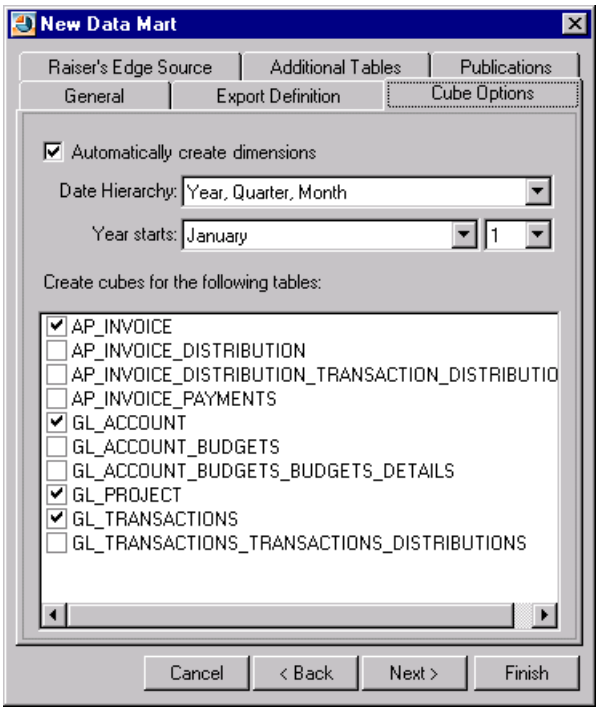


8. To save your export settings and return to the Export Definition tab, click **Save and Close**.
9. If you are creating a new data mart, click **Next** to access the Cube Options tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the FE:Express Cube Options tab

1. While creating or editing an *FE:Express* data mart, select the Cube Options tab.



2. Mark the **Automatically create dimensions** checkbox to give you flexibility in your reports later. In an *FE:Express* data mart, dimensions are any code table included in the export file. Creating the dimensions now saves you the time of adding them manually later.
3. Select a **Date Hierarchy** to determine how date dimensions nest in the cube and appear in reports. Specify when the **Year starts** for your organization. For example, if your fiscal year begins March 1, you can enter that information here.
4. In the **Create cubes for the following tables** box, each table that will be generated in the data mart (based on your export settings) is included as a checkbox. Mark the checkbox by each table for which you want to create a cube. All ***Information Edge*** analysis features will be available for each of these cubes.
5. If you are creating a new data mart, click **Next** to access the Raiser's Edge Source tab. For more information about this tab, see the next procedure.

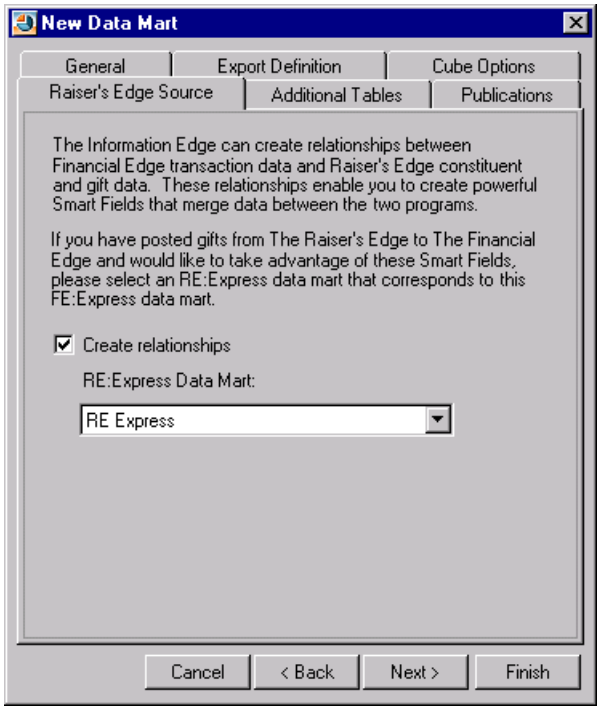
   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

Do not use the Long Date Format for any export date fields. Long dates are stored as VarChar format in ***The Information Edge***; therefore, no date calculations can be performed on long dates. Additionally, if you edit export properties and change a date format to long, existing smart fields and segmentations which rely on the **Date** field are impacted.

➢ Completing the FE:Express Raiser's Edge Source tab

This tab is available only if you have already created an *RE:Express* data mart.

1. While creating or editing an *FE:Express* data mart, select the Raiser's Edge Source tab.


New Data Mart
General
Export Definition
Cube Options
Raiser's Edge Source
Additional Tables
Publications
The Information Edge can create relationships between Financial Edge transaction data and Raiser's Edge constituent and gift data. These relationships enable you to create powerful Smart Fields that merge data between the two programs.
If you have posted gifts from The Raiser's Edge to The Financial Edge and would like to take advantage of these Smart Fields, please select an RE:Express data mart that corresponds to this FE:Express data mart.
Create relationships
RE:Express Data Mart:
RE Express
Cancel
< Back
Next >
Finish

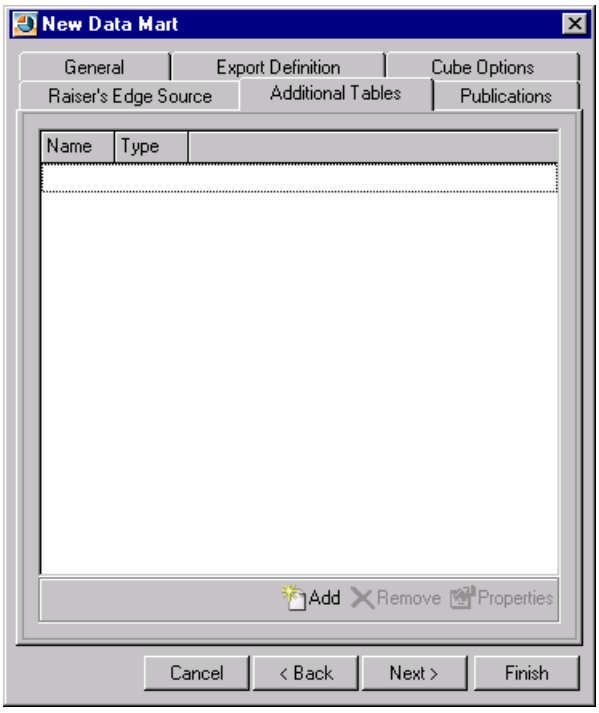
2. If you have posted gifts from ***The Raiser's Edge*** to ***The Financial Edge*** and would like to create smart fields that enable you to merge data from the two programs, mark the **Create relationships** checkbox.
3. From the **RE:Express Data Mart** dropdown, select the *RE:Express* data mart containing gift information that has been posted to ***The Financial Edge***.

   This information can be used in a Blackbaud Transaction Data smart field. For example, if you select an *RE:Express* data mart here, when you create a Blackbaud Transaction Data smart field, "The Raiser's Edge" appears on that smart field as an available program, enabling you to pull constituent and gift information onto the transactions table for each transaction. For more information about the Blackbaud Transaction Data smart field, see "Blackbaud Transaction Data" on page 271.
4. If you are creating a new data mart, click **Next**. The Additional Tables tab appears. For more information about adding data from other tables to an *FE:Express* data mart, see "Adding data from another source to an RE:Express or FE:Express data mart" on page 39.

   If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the FE:Express Additional Tables tab

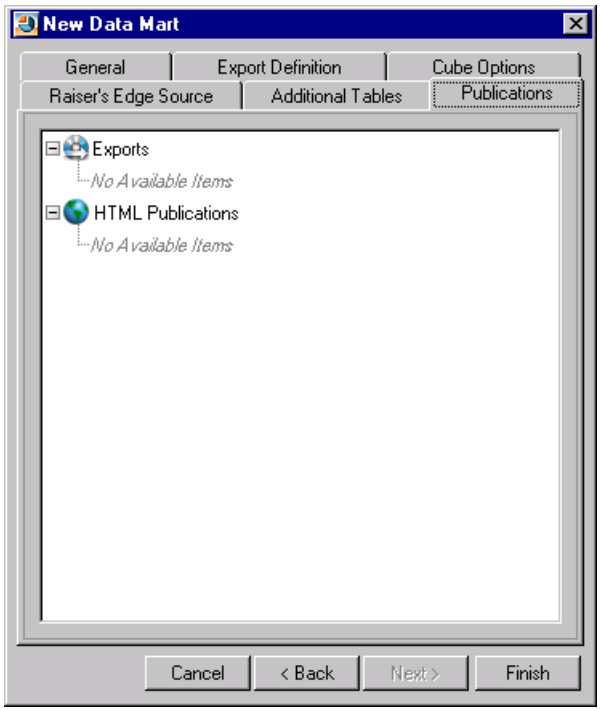
1. While creating or editing an *FE:Express* data mart, select the Additional Tables tab.



2. To add a new data source, click **Add**. The Create Table or Append Data screen appears. For information about how to complete the Create Table or Append Data screens, see “Adding data from another source to an RE:Express or FE:Express data mart” on page 39.
3. When you complete the Create Table or Append Data screens and return to the Additional Tables tab, **Name** and **Type** of the additional data source appears.
4. If you are creating a new data mart, click **Next** to access the Publications tab. For more information about this tab, see the next procedure.
5. If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the FE:Express Publications tab

1. While creating or editing an *FE:Express* data mart, select the Publications tab.



   If you are creating a data mart, no items are available for processing yet. If you are editing an existing mart, any exports and HTML Publications you have created are available as checkboxes. Specify which of these items you would like to process automatically when the data mart is processed.

   When you create exports or HTML Publications on a client machine, you can specify an output path on the client machine. However, because the Schedule function runs on the server, it attempts to output the HTML Publication or export to the specified output path on the server. If the path does not exist on the server, the HTML Publication or Export fails. In this case, you need to either create the same path on the server or update the path in the export or HTML Publication to one that exists on the server to enable the item to process.

2. If you are editing the properties of an existing mart, click **OK** to save your changes and exit the properties tabs. If you are creating a new data mart, click **Finish** to install the data mart.

   A message informs you when the data mart is successfully installed. The data mart then appears in the tree view.

   FE:Express data mart tables contain several ID fields that are generated automatically. For more information about these fields, see the next section.

After you create a data mart, to edit its properties, select the data mart in the tree view, right-click on it, and select **Data Mart Properties**.

BIZINTEL IDs in FE:Express Data Marts

Several ID fields are generated automatically in every table created in an *FE:Express* data mart. All these fields have a name that begins with "BIZINTEL."

BIZINTEL_ID. This is always the Primary Key of the table. It is a system generated ID with no relation to any records defined in ***The Financial Edge***. It can be considered as a unique identifier of the row in the table.

BIZINTEL_PARENTID. This is always the Foreign Key field that points to the BIZINTEL_ID in the parent table. This field appears only on a table with a one-to-many relationship to another table. For example, the AP_INVOICE table never has this field because it is the "root" and is not a child to any other table.

BIZINTEL_PARENTID_{TABLENAME}. When this ID is present, it is always a Foreign Key field that points to the BIZINTEL_ID in a parent table that is part of another export. This field also appears only on a table with a one-to-many relationship to another table. This ID defines the relationship between tables that may have been exported in separate exports, but that are related to each other in ***The Financial Edge***. For example, the TRANSACTIONS table may be included in a separate export from the GL_ACCOUNT table, but the TRANSACTIONS table includes a BIZINTEL_PARENTID_GL_ACCOUNT column to define the relationship between the tables in ***The Financial Edge***.

BIZINTEL_{TABLENAME}_SYSTEM_ID. This is the ***Financial Edge*** System Record ID of the parent record to which this row is related. For example, in the GL_ACCOUNTS_BUDGET table, it is the System Record ID of the GL ACCOUNT.

BIZINTEL_FE_ID. This is the System Record ID of the corresponding table from ***The Financial Edge***.

This field does not appear on the parent table because it would be redundant with the BIZINTEL_{TABLENAME)_SYSTEM_ID. However, it appears on all other tables.

You will probably never need to use the two IDs related to ***The Financial Edge*** system record ID (BIZINTEL_{TABLENAME}_SYSTEM_ID and BIZINTEL_FE_ID). They exist mainly to enable drilling through records. However, you may use the BIZINTEL_ID, BIZINTEL_PARENTID, and BIZINTEL_PARENTID_{TABLENAME} fields because they are the Primary Key and Foreign Key used in any JOIN or subquery expression to join tables. For more information about using subqueries to join tables, see "Expression Smart Field Examples" on page 296.

Installing Data Marts Created by Blackbaud

If you have the Enterprise version of ***The Information Edge***, you can create your own custom data marts using the *Universal Source Connector*. For more information, see "Universal Source Connector" on page 203.

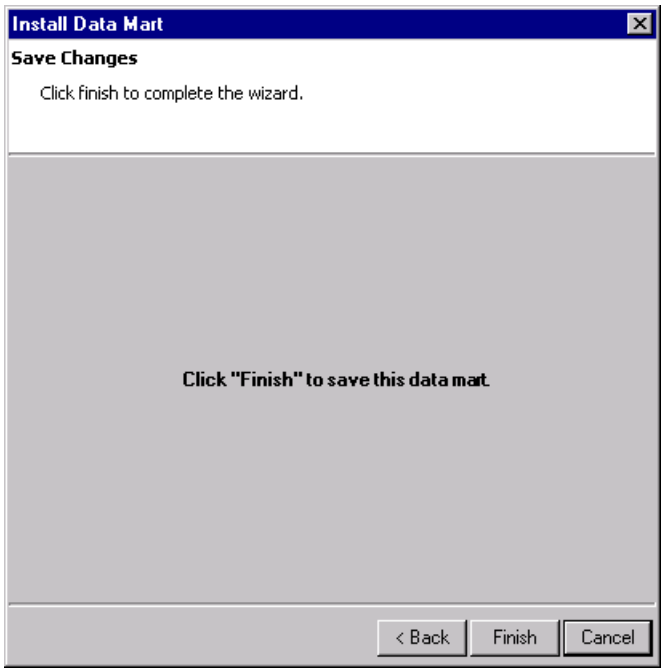
You can install a data mart created especially for your organization by Blackbaud. Once a data mart is installed into ***The Information Edge***, it is added to the tree view in the left pane of the program, where you can access functions such as Pivot Tables for each cube in the data mart.

➢ Installing a data mart created by Blackbaud

1. On the menu bar, select **File**, **New**. Select **Data Mart**, **Core Solutions**. The Select Core Solutions File screen appears. Browse to the location where you saved the file created for you by Blackbaud.
2. Select the file and click **OK**. The Select Core Solution file screen appears.
3. In the **Data Mart Name** field, the name defaults in for this data mart. This name will display for the data mart in the tree view. A prefix to display with each table entry for this data mart also defaults into the **Table Prefix** field. Enter text to describe the data mart in ***The Information Edge*** console in the **Description** field.
4. Click **Next**. Depending on the types of sources used to create your data mart, different screens may appear at this point. Follow the prompts on the screen that appears for the particular data mart you are installing.

After you add a data mart, to edit its properties, select the data mart in the tree view, right-click on it, and select **Data Mart Properties**.

5. Click **Next**. When you are done specifying properties for the data mart, the Save Changes screen appears.



6. Click **Finish** to install the data mart. Depending on the amount of data contained in the data mart, the installation may take several minutes.

   A message informs you when the data mart is successfully installed. It then appears in the tree view.

Refreshing Data in Data Marts

You can manually refresh the data in a data mart at any time. On the Schedules tab of *Configuration*, you can also establish a schedule for how often you want to automatically process (refresh) the data in the data mart.

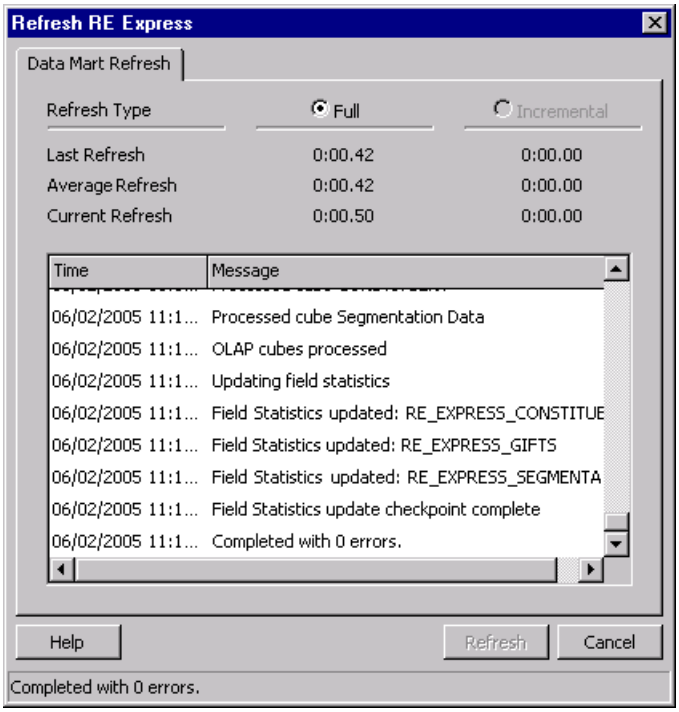
In a data mart's properties, you can select to process exports, WriteBacks, and Publications automatically each time the mart is refreshed. You can also specify to compile field use statistics. Additionally, if you have the optional module *Marketing Segmentation*, you can specify that segmentations be activated and updated when the data mart refreshes. If for any reason any of these items fails during a data mart refresh, the data mart will continue to process, but a warning occurs.

After the mart processes, the Data Mart Refresh tab lists the **Last Checkpoint** before a warning occurred. You can view the messages to see information about any items that did not complete.

You cannot automatically process *Postal Discount* exports as part of a data mart refresh. For more information, see "Postal Discount Exports" on page 97.

➢ Processing a data mart manually

1. From the *Configuration* tree view, select the data mart you want to refresh. On the action bar, click **Refresh**, **Refresh <Data Mart Name>**.
2. The Data Mart Refresh tab appears.



3. If you are refreshing an RE:Express data mart, before beginning the refresh, you can specify whether it should be **Full** or **Incremental**. For more information about the difference between the two, see "Incremental vs. Full Refresh" on page 30.
4. Click **Refresh** to begin processing the data mart.

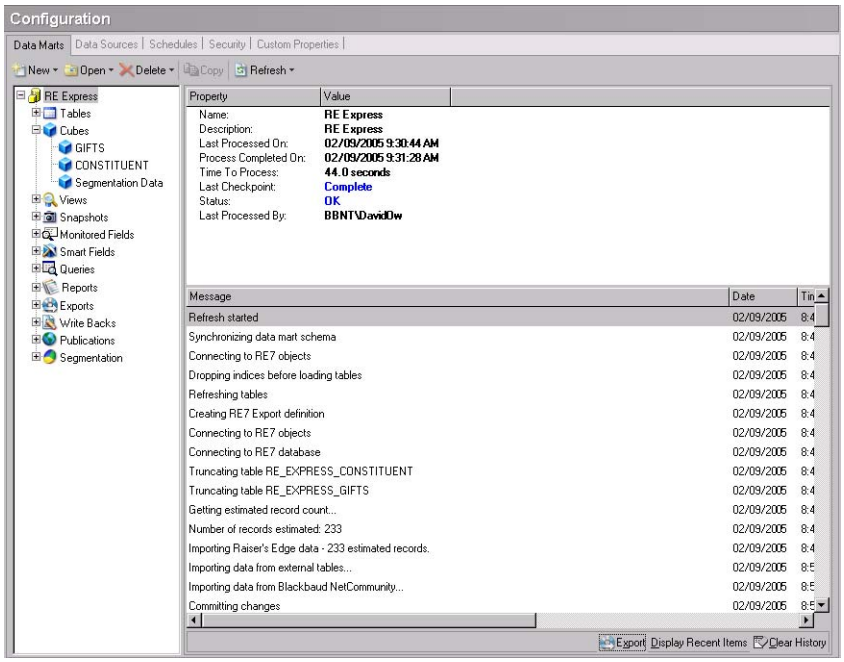
The **Restart Refresh** option is available if a previous data mart refresh was interrupted for some reason. To save time, you can begin processing from the last checkpoint instead of starting over.

During processing, elapsed time information appears at the top of the tab and status messages appear in the text box. When the refresh completes, the status shows whether any errors were encountered.

You can also schedule data marts to process automatically at set intervals. For more information, see “Scheduling automatic data mart processing” on page 127.

➢ Viewing or exporting refresh history for a data mart

1. On the *Configuration* tree view, select the data mart for which you want to review the refresh history.

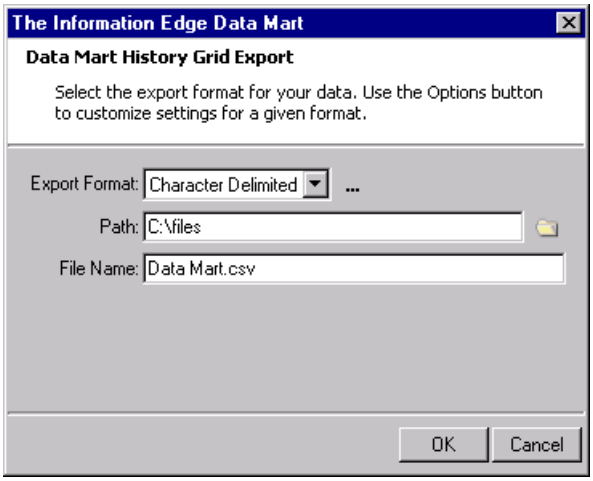


The history shows information such as messages displayed during the processing of data, and the date and time of the refresh.

2. If you want to view information for only the most recent refresh, click **Display Recent Items** on the lower right of the page. If you want to view a complete history, click **Display All Items**. These items toggle back and forth, so both are not visible at the same time.

You can move the “slider” between the upper and lower pane up if you want to view more of the history with less scrolling.

3. For reference purposes, you can export the history grid. Click **Export** on the lower right, and the Data Mart History Grid Export screen appears.



   a. Specify the format for the export, the path to the location where you want to save the export, and the file name for it.

   b. Click **OK** to export the grid information.

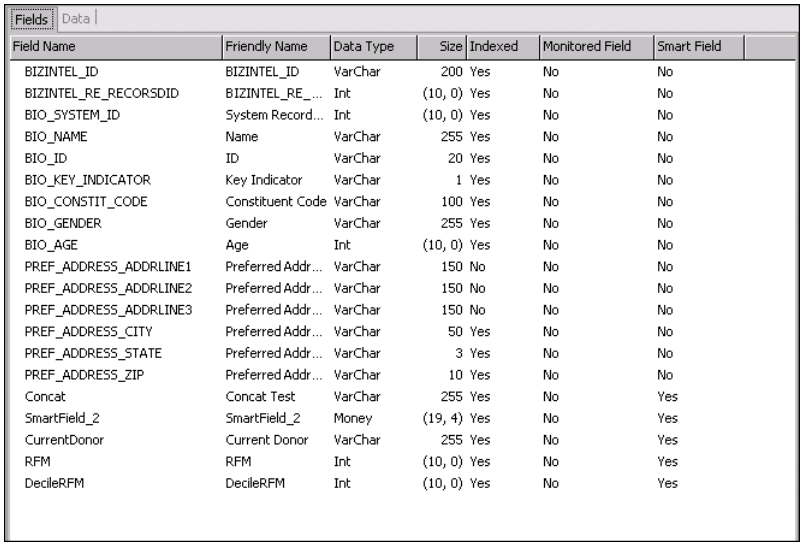
4. If you want to delete processing history information, click **Clear History** on the lower right of the page. A message appears. Click **OK** to delete the history.

Tables

You can view all the data tables included in each cube of a data mart.

Fields Tab

The Fields tab displays the table name, the number of rows it contains, and other information. To access this view, select **Tables** in the tree view. You can then select an individual table for which you want to view general information. Click **Add to Dashboard** if you want the general information for the table to appear on your Dashboard.



Fields | Data

Field Name	Friendly Name	Data Type	Size	Indexed	Monitored Field	Smart Field
BIZINTEL_ID	BIZINTEL_ID	VarChar	200	Yes	No	No
BIZINTEL_RE_RECORSDID	BIZINTEL_RE_...	Int	(10, 0)	Yes	No	No
BIO_SYSTEM_ID	System Record...	Int	(10, 0)	Yes	No	No
BIO_NAME	Name	VarChar	255	Yes	No	No
BIO_ID	ID	VarChar	20	Yes	No	No
BIO_KEY_INDICATOR	Key Indicator	VarChar	1	Yes	No	No
BIO_CONSTIT_CODE	Constituent Code	VarChar	100	Yes	No	No
BIO_GENDER	Gender	VarChar	255	Yes	No	No
BIO_AGE	Age	Int	(10, 0)	Yes	No	No
PREF_ADDRESS_ADDRLINE1	Preferred Addr...	VarChar	150	No	No	No
PREF_ADDRESS_ADDRLINE2	Preferred Addr...	VarChar	150	No	No	No
PREF_ADDRESS_ADDRLINE3	Preferred Addr...	VarChar	150	No	No	No
PREF_ADDRESS_CITY	Preferred Addr...	VarChar	50	Yes	No	No
PREF_ADDRESS_STATE	Preferred Addr...	VarChar	3	Yes	No	No
PREF_ADDRESS_ZIP	Preferred Addr...	VarChar	10	Yes	No	No
Concat	Concat Test	VarChar	255	Yes	No	Yes
SmartField_2	SmartField_2	Money	(19, 4)	Yes	No	Yes
CurrentDonor	Current Donor	VarChar	255	Yes	No	Yes
RFM	RFM	Int	(10, 0)	Yes	No	Yes
DecileRFM	DecileRFM	Int	(10, 0)	Yes	No	Yes

Field Statistics

When you mark the **Maintain field statistics** checkbox on the Data Mart Properties screen while creating or editing a data mart, the Fields tab shows additional detail information for each table.

To view all the available statistics, right-click on any column heading.

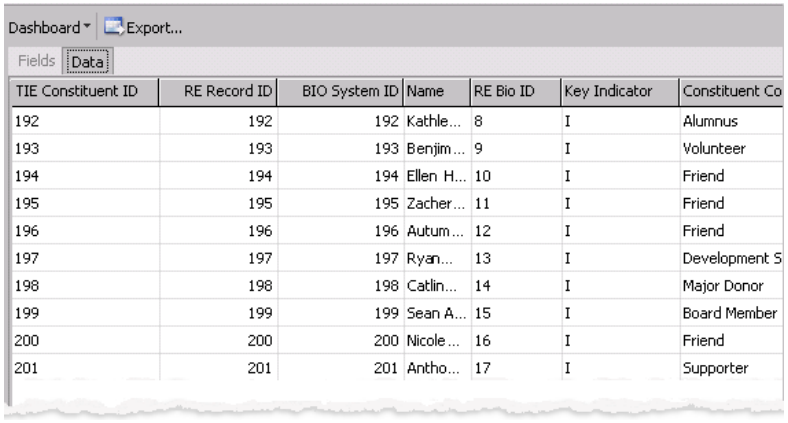
For each field in the selected table you can view information such as the data type, how many instances do and do not contain data, the number of different values in the field, and the percentage of instances that are populated with data. For non-text fields, you can view the minimum and maximum entry. Statistics cannot be added to the Dashboard.

Tracking field statistics enables you to determine whether a field is valid for further analysis based on its population. For example, if an **Income** field has only two distinct values or only includes a value for ten percent of your donors, the field would probably not be useful for a function such as a marketing segmentation. A distinct count is not available for fields that are not indexed.

If you do not specify to maintain field statistics while creating or editing a data mart, the field type, size, and indexed information still appear on the Fields tab.

Data Tab

The Data tab displays the individual records for each field in a selected data table. To access this tab, in *Configuration* select **Tables**. You can then select an individual table and select the Data tab.



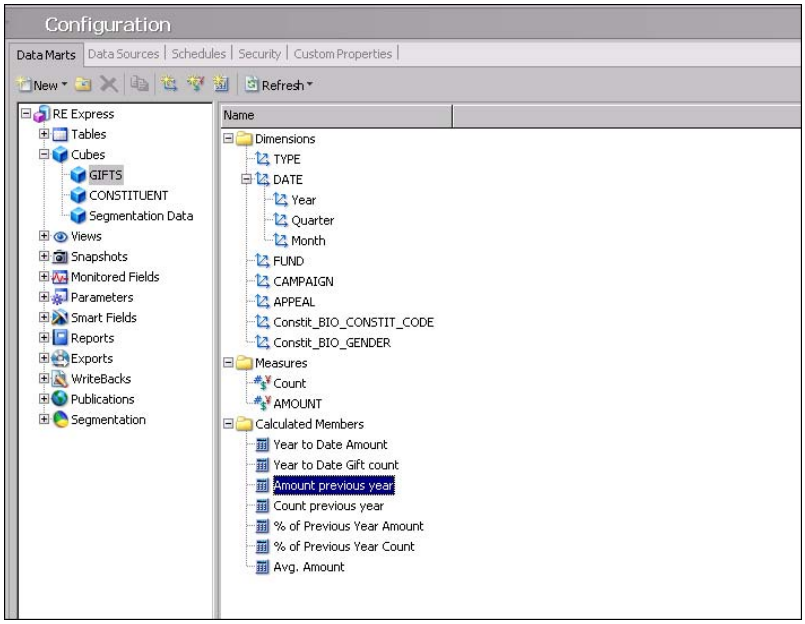
TIE Constituent ID	RE Record ID	BIO System ID	Name	RE Bio ID	Key Indicator	Constituent Co
192	192	192	Kathle...	8	I	Alumnus
193	193	193	Benjim...	9	I	Volunteer
194	194	194	Ellen H...	10	I	Friend
195	195	195	Zacher...	11	I	Friend
196	196	196	Autum...	12	I	Friend
197	197	197	Ryan...	13	I	Development S
198	198	198	Catlin...	14	I	Major Donor
199	199	199	Sean A...	15	I	Board Member
200	200	200	Nicole...	16	I	Friend
201	201	201	Antho...	17	I	Supporter

Click **Export** in the action bar to export data from a table in character delimited, XML, or Excel format. For more information about exporting, see “Creating an export definition” on page 89.

Cubes

A central feature of high speed analytical reporting is the Online Analytical Processing (OLAP) cube. A relational database can be thought of as two-dimensional, with rows and columns in a table. However, a multidimensional database is based on the idea of structuring data as a “cube.” Each data attribute in the cube is a separate “dimension.” Dimensions such as time periods can be broken down into subattributes (year, month, day).

The Information Edge can quickly locate and display the intersection of dimensions. For example, you can quickly determine the number of gifts given to a specific appeal during the month of April by constituents over age 55 who live in a certain city. Measures are the numeric values used to analyze the intersection of dimensions. In the previous example, the number of gifts is the measure. For more information about OLAP cubes, see “Understanding Cubes” on page 16.



You can add the following items to a cube:

- Dimensions - similar to fields in a relational database
- Measures - numeric values assigned to dimensions
- Calculated Members - during creation of some data marts, calculated members are created. These special types of measures are not stored in the database; rather, they are instead calculated “on the fly.” You can also create these types of measures.

Refreshing Data in Cubes

You can process the data in a cube at any time by selecting **Refresh** in the action bar and specifying a cube. Only the data in that particular cube is refreshed. When you right-click a cube on the Cubes page, you can also unmark the **Automatic Refresh** checkbox to specify that a cube not be refreshed when the analytic to which it belongs is refreshed. You can also do this from the **Tools** menu when you have a cube selected.

A warning message appears stating that the cube will not be refreshed during scheduled updates of the analytic. You may want to turn off automatic processing for a cube if, for example, a cube contains data that does not change often or contains data that is not time-sensitive. By not including such a cube in your scheduled data mart refreshes, you can reduce processing time. You can still process the cube manually whenever necessary.

Adding Dimensions

A multidimensional database can examine each piece of data from a different perspective. Each of these perspectives is called a “dimension.”

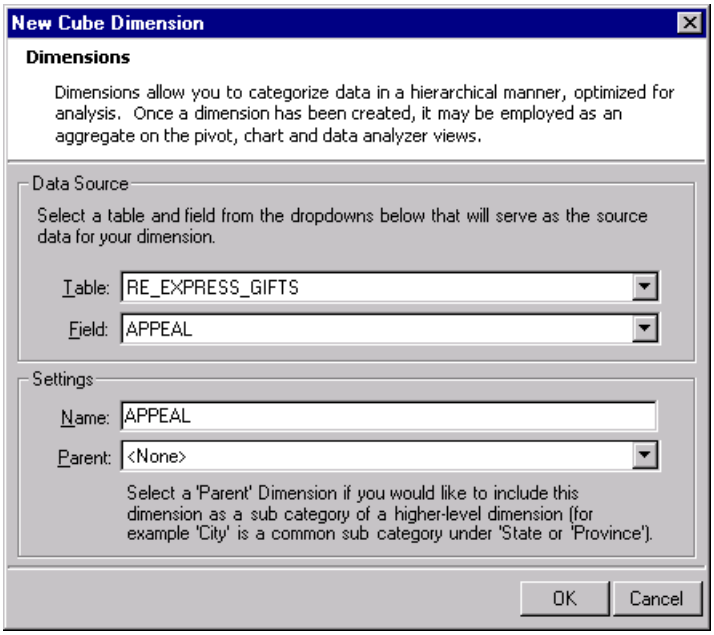
Dimensions help form the structure of a cube, which is an organized hierarchy of categories (levels) that describe data in the database. The categories usually describe a similar set of items upon which you can base an analysis. Dimensions based on other dimensions create the hierarchy. For example, a geography dimension may include dimensions for Country, Region, and City. Using any of the data visualization tools (such as Charts or Pivot Tables) in ***The Information Edge***, you can click on a hierarchy to drill down and see more detail.

Because of the cubelike structure of the multidimensional database, ***The Information Edge*** can locate the intersection of dimensions side by side, top to bottom, or in any other way within the cube.

You can add new dimensions to the cubes based on the tables created from your data sources. You can also add new “measures” for each dimension. Measures are numeric values assigned to dimensions. These are the actual numbers on which you base your reports. For example, you may have a “dimension” of Gift Type. Within that dimension, you may measure count and amount.

➢ Adding a dimension

1. On the *Configuration* tree view, click the plus sign beside **Cubes** under the data mart containing the cube for which you want to add a dimension.
2. Right-click on the cube, and select **New Dimension**. The New Cube Dimension screen appears.


New Cube Dimension
Dimensions
Dimensions allow you to categorize data in a hierarchical manner, optimized for analysis. Once a dimension has been created, it may be employed as an aggregate on the pivot, chart and data analyzer views.
Data Source
Select a table and field from the dropdowns below that will serve as the source data for your dimension.
Table: RE_EXPRESS_GIFTS
Field: APPEAL
Settings
Name: APPEAL
Parent: <None>
Select a 'Parent' Dimension if you would like to include this dimension as a sub category of a higher-level dimension (for example 'City' is a common sub category under 'State or 'Province').
OK
Cancel

3. In the **Data Source** frame, select the **Table** from which the source data for the dimension will come. Select a **Field** from the table.

4. In the **Settings** frame, enter a **Name** for the dimension. This name appears in the console and in reports. If you want the new dimension to be a sub category of an existing dimension, select the existing dimension in the **Parent** field.

   For example, Year, Quarter, and Month can be subdimensions of the parent dimension Date.

5. Click **OK** to save your new dimension. You return to the console. The new dimension appears in the right pane.

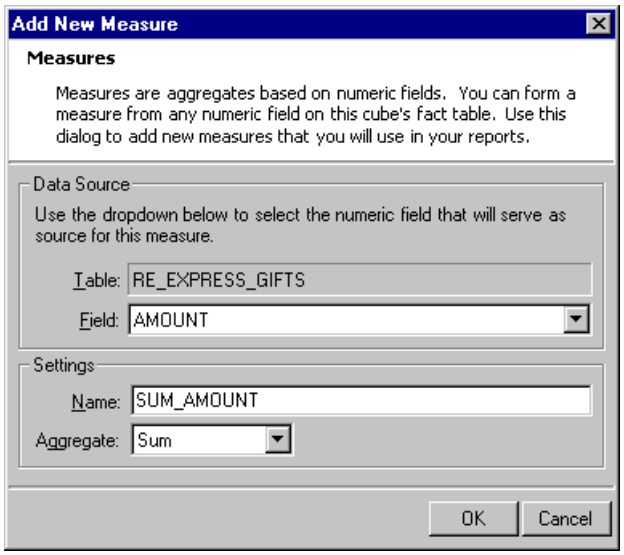
Adding Measures

You can add new "measures" for each dimension. Measures are numeric values assigned to dimensions. These are the actual numbers on which you base your reports. A measure is always a quantity or a representation that yields a quantity. You must have at least one measure to perform any type of analysis.

A measure is a quantity that is analyzed across multiple dimensions by ***The Information Edge***. For example, a cube may include gift amounts by month, by appeal, and by constituent. The measure in this case is gift amount, and each intersection of the three dimensions has a different gift amount value.

➢ **Adding a measure**

1. On the tree view, click the plus sign beside **Cubes** under the data mart containing the cube for which you want to add a dimension.
2. Right-click on the cube and select **New Measure**. The Measures screen appears.


Add New Measure
Measures
Measures are aggregates based on numeric fields. You can form a measure from any numeric field on this cube's fact table. Use this dialog to add new measures that you will use in your reports.
Data Source
Use the dropdown below to select the numeric field that will serve as source for this measure.
Table: RE_EXPRESS_GIFTS
Field: AMOUNT
Settings
Name: SUM_AMOUNT
Aggregate: Sum
OK
Cancel

3. In the **Data Sources** frame, the **Table** field is locked with the name of the fact table on which the cube is based. You can select any numeric **Field** from this table on which to base your new measure. All available fields with a numeric entry are available in the **Field** dropdown. This selection determines what you are measuring in the newly created measure.

4. In the **Settings** frame, indicate how you want the measure to display in the **Name** field. Select a method for gathering the new measure quantity in the **Aggregate** field. Select from Count, DistintCount, Max, Min, and Sum. For example, you may select GIFTS.AMOUNT as the numeric field, and Sum as the aggregation method to supply a measure that displays the total of all gift amounts.
5. Click **OK**. You return to the console. The new measure appears in the right pane.

Adding Calculated Members

Calculated members are special types of measures that are not stored in the database; rather, they are instead calculated "on the fly." Calculated members are determined by other members' values. You can add calculated members using a wizard included in ***The Information Edge***. The wizard assists you in writing the multidimensional expressions that create calculated members. Multidimensional expressions are a syntax used for defining multidimensional objects, and querying and manipulating multidimensional data. To learn more about multidimensional expressions, see your *SQL Server Books Online* documentation.

You can use the wizard to create calculated members that are available for use with any Pivot Table or Chart in a cube, or that are available only within an individual Pivot Table. You may want to prototype and test your calculated member by creating it for a single Pivot Table. Once you are sure the calculation functions as you intend it to, you can recreate the member for the entire cube so that it can be used in any Pivot Table or Chart created from the cube.

Calculated members created for use with a single Pivot Table are stored on the workstation. Calculated Members created for use with any Pivot Table or Chart are stored on the server.

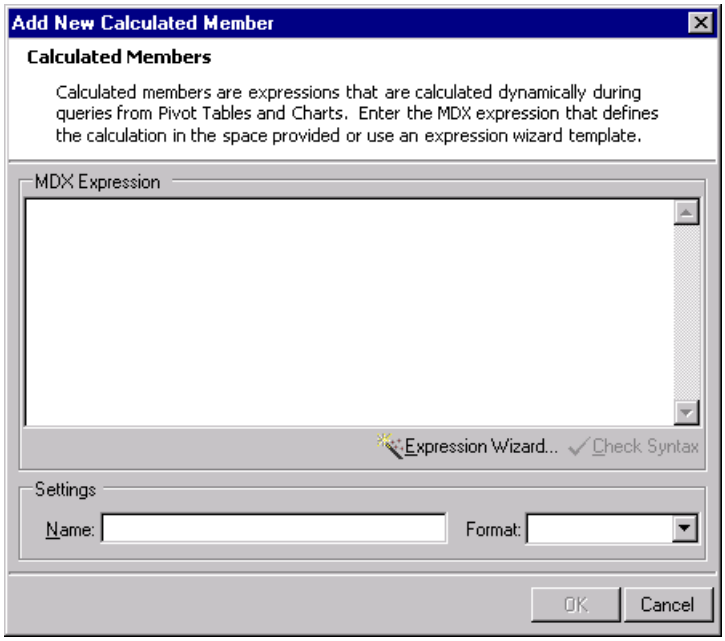
Once you create a calculated member, you can use it to build other calculated members. For example, you may create a calculated member to rank your funds based on total giving amount. You can then use that calculated member to create another calculated member that compares the rankings for this year and last year.

➢ **Adding a calculated member**

This procedure demonstrates how to create a calculated member that is available for an entire cube. To create one that is available only for a single Pivot Table, from the table click the **Calculated Totals and Fields** toolbar button and select **Calculated Member Wizard**. Then skip to step three of this procedure.

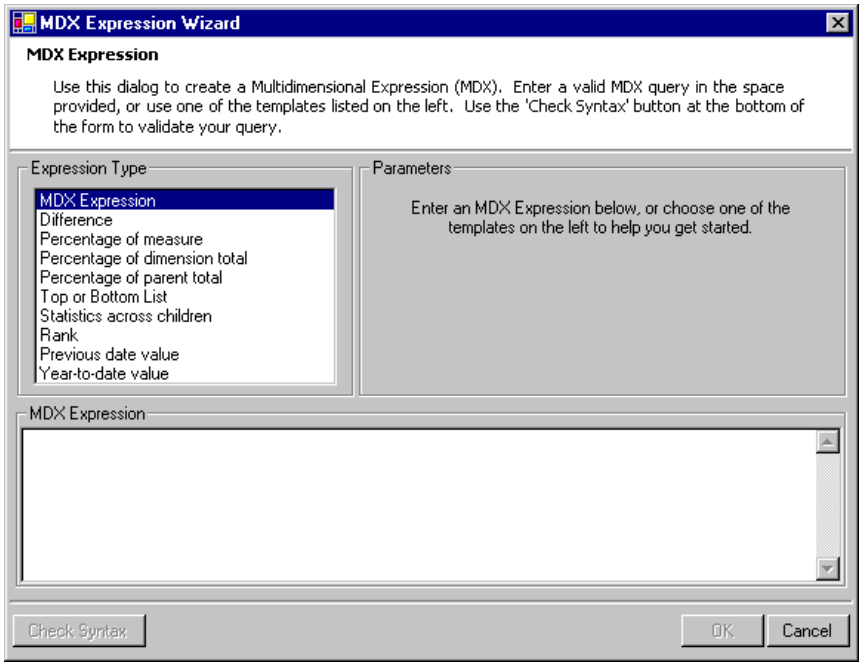
1. On the *Configuration* tree view, click the plus sign beside **Cubes** under the data mart containing the cube for which you want to add a calculated member.

2. Right-click on the cube and select **New Calculated Member**. The Add New Calculated Member screen appears.


Add New Calculated Member
Calculated Members
Calculated members are expressions that are calculated dynamically during queries from Pivot Tables and Charts. Enter the MDX expression that defines the calculation in the space provided or use an expression wizard template.
MDX Expression
Expression Wizard...
Check Syntax
Settings
Name:
Format:
OK
Cancel

3. You can manually enter a multidimensional expression in the **MDX Expression** box.

4. If you would like to use a template or base an expression on a template, click **Expression Wizard**. The MDX Expression Wizard appears.


MDX Expression Wizard
MDX Expression
Use this dialog to create a Multidimensional Expression (MDX). Enter a valid MDX query in the space provided, or use one of the templates listed on the left. Use the 'Check Syntax' button at the bottom of the form to validate your query.
Expression Type
MDX Expression
Difference
Percentage of measure
Percentage of dimension total
Percentage of parent total
Top or Bottom List
Statistics across children
Rank
Previous date value
Year-to-date value
Parameters
Enter an MDX Expression below, or choose one of the templates on the left to help you get started.
MDX Expression
Check Syntax
OK
Cancel

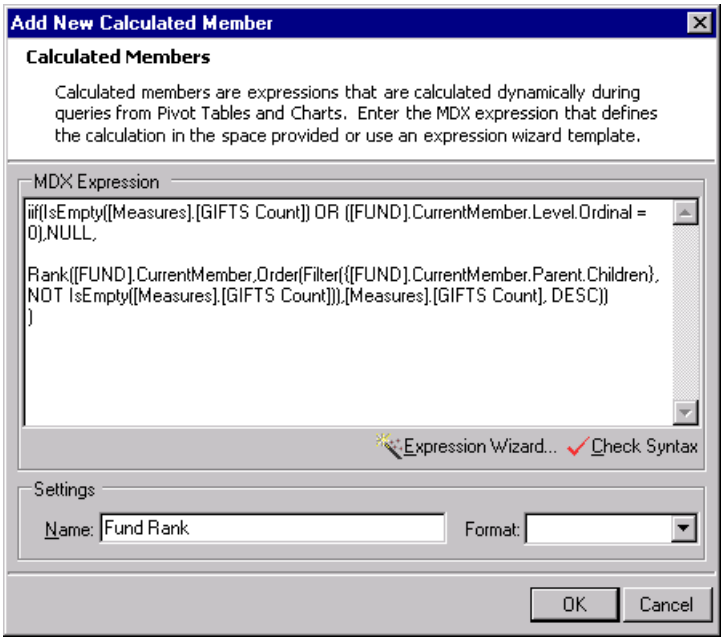
5. Select an **Expression Type**. If you select “MDX Expression,” you can manually enter a multidimensional expression in the **MDX Expression** box.

6. If you select an expression type other than MDX, additional fields appear in the **Parameters** frame to help you build an expression to create the calculated member. As you make selections in the **Parameters** frame, the expression is created in the **MDX Expression** box.

   Several types of calculated member templates are available in the wizard. The available templates depend on the types of fields in the cube for which you are creating the member. For information about each template, see "Calculated Member Templates" on page 69.

7. After you establish parameters to build your expression, you can click **Check Syntax** to ensure the validity of the statement.

8. Click **OK**. You return to the Add New Calculated Member screen. The expression created in the wizard appears in the **MDX Expression** box.


Add New Calculated Member
Calculated Members
Calculated members are expressions that are calculated dynamically during queries from Pivot Tables and Charts. Enter the MDX expression that defines the calculation in the space provided or use an expression wizard template.
MDX Expression
iif(IsEmpty([Measures].[GIFTS Count]) OR ([FUND].CurrentMember.Level.Ordinal = 0),NULL,
Rank([FUND].CurrentMember,Order(Filter({[FUND].CurrentMember.Parent.Children}, NOT IsEmpty([Measures].[GIFTS Count])),[Measures].[GIFTS Count], DESC))
)
Expression Wizard...
Check Syntax
Settings
Name: Fund Rank
Format:
OK
Cancel

9. Enter a **Name** for the calculated member.

10. You do not have to enter anything in the **Format** field. However, you can use this field to specify that the value of the member display as currency, percent, or a variety of other formats. Some template formats contain their own formatting options. If you select a formatting option using the Expression Wizard, you do not need to enter anything in the **Format** field here.

11. Click **OK** to save your calculated member and return to ***The Information Edge*** console. The member now appears in the cube.

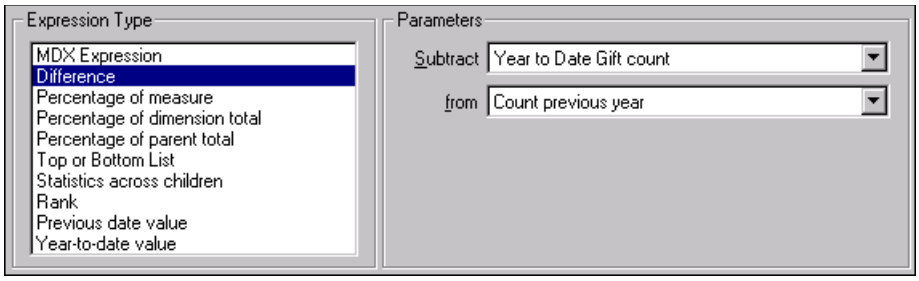
To learn more about multidimensional expressions, see your *SQL Server Books Online* documentation.

Format options available on the Calculated Member screen and Expression Wizard follow the same rules as *Excel* format options. For more information, see your *Excel* documentation.

Calculated Member Templates

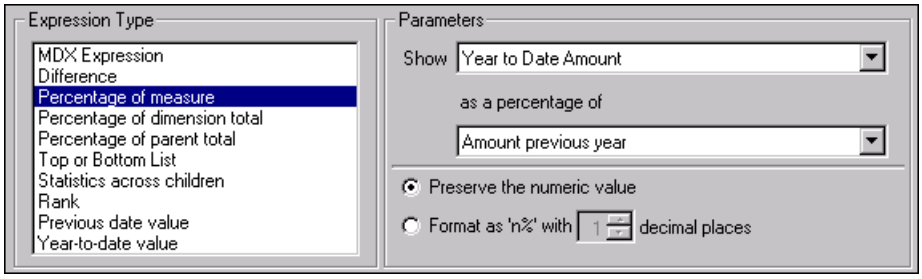
Templates include multidimensional expressions to create several types of calculated members. The expression always appears in the **MDX Expression** box for reference, or if you want to edit or add to it manually.

Difference



You can calculate the difference between two values by specifying an initial value you want to subtract from another value. For example, you may want to **Subtract** your "Year to date gift count" **from** your gift "Count previous year", so you can compare your progress so far this year with your total from last year.

Percentage of Measure

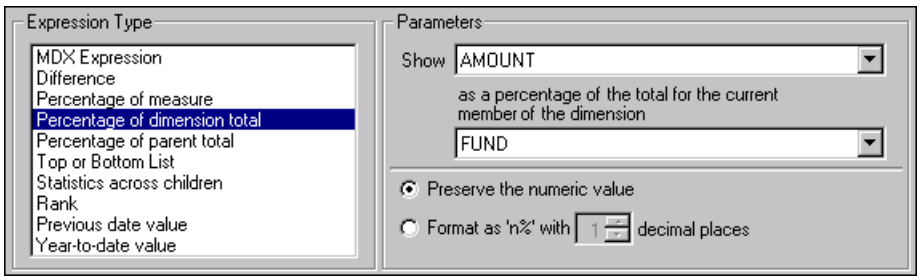


You can calculate a percentage of a measure. For example, you may want to **Show** the value of your "Year to date amount" **as a percentage of** the total "Amount previous year" to see how your total giving numbers compare with last year.

Mark the **Preserve the numeric value** option if you want the calculated value to display as a number. Mark this option if you want the value derived by the expression to be available for further manipulation, for example, in another expression or a Pivot Table.

Mark the **Format as 'n%' with** option if you want the value to display as a string. You can specify the number of decimal places you want to display with the percentage. You should mark this option only if the expression is complete as a standalone and the value will not be manipulated in another expression.

Percentage of Dimension Total



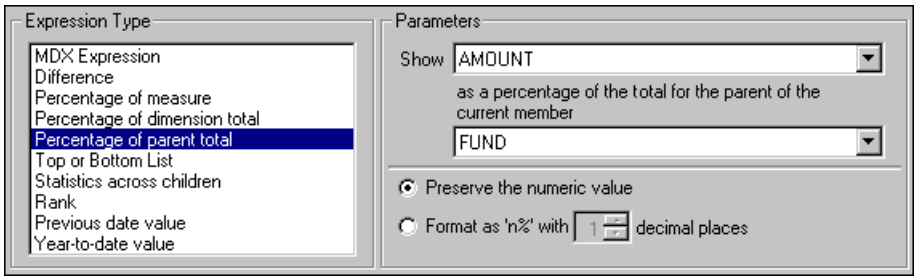
This expression calculates the value of a measure as a percentage of the current member of a dimension. For example, you may want to **Show** the value of your total gift "Amount" **as a percentage of the total for the current member of the dimension** "Fund" to show how much of your total giving is brought in by each individual fund.

In a Pivot Table, the value in a cell is the intersection of a pivot. In the Percent of Dimension Total expression, "current member" refers to a cell that is current in context (selected or in view). For more information, see "About Dimension Hierarchies and Members" on page 74.

Mark the **Preserve the numeric value** option if you want the calculated value to display as a number. Mark this option if you want the value derived by the expression to be available for further manipulation, for example, in another expression or a Pivot Table.

Mark the **Format as 'n%' with** option if you want the value to display as a string. You can specify the number of decimal places you want to display with the percentage. You should mark this option only if the expression is complete as a standalone and the value will not be manipulated in another expression.

Percentage of Parent Total



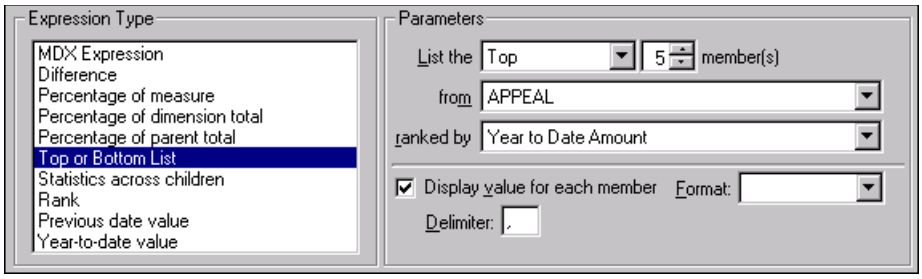
This expression is somewhat similar to the Percentage of Dimension Total expression, except the Percentage of Parent Total calculates the value of a measure as a percentage of the current member's *parent* dimension. For example, you can **Show** "Amount" **as a percentage of the total for the parent of the current member** "Fund."

In this case, if you look at the cube hierarchy, the "Fund" dimension may not appear to be a child of any other dimension. However, it is actually a child of the "All Member" dimension. All Member is implied as parent for every dimension. For more information about All Member, see "About Dimension Hierarchies and Members" on page 74.

Mark the **Preserve the numeric value** option if you want the calculated value to display as a number. Mark this option if you want the value derived by the expression to be available for further manipulation, for example, in another expression or a Pivot Table.

Mark the **Format as 'n%' with** option if you want the value to display as a string. You can specify the number of decimal places you want to display with the percentage. You should mark this option only if the expression is complete as a standalone and the value will not be manipulated in another expression.

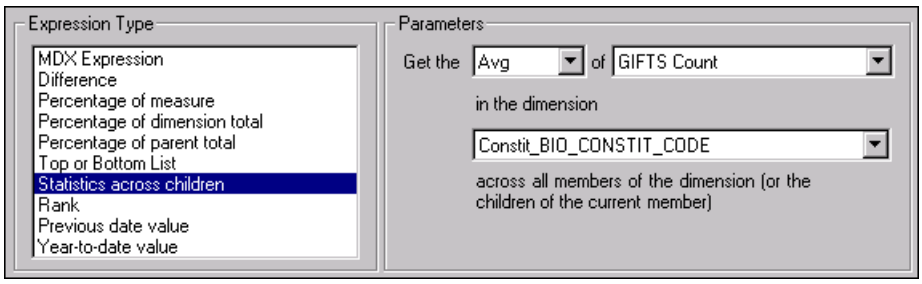
Top or Bottom List



This expression creates a list of the top or bottom entries for a field as ranked by a value you select. For example, you may want to **List the** "Top 5" **member(s) from** the "Appeal" dimension, **ranked by** "Year to date amount" so you can analyze which of your appeals are performing best.

You can also mark a checkbox to specify whether you want to **Display value for each member**, and enter a character to appear as **Delimiter** between the entries. If you display the value, you can select the **Format** in which it will appear. For example, you may want monetary values to display as currency.

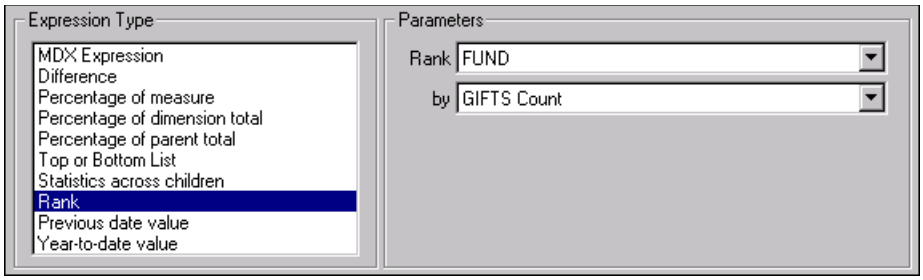
Statistics Across Children



This expression calculates a function such as average, standard deviation, or variance for a member of a dimension and all children of the current member of the dimension. For example you may want to **Get the** "Avg" **of** the "Gift count" **in the dimension** "Constituent Code" **across all members of the dimensions (or the children of the current member)**.

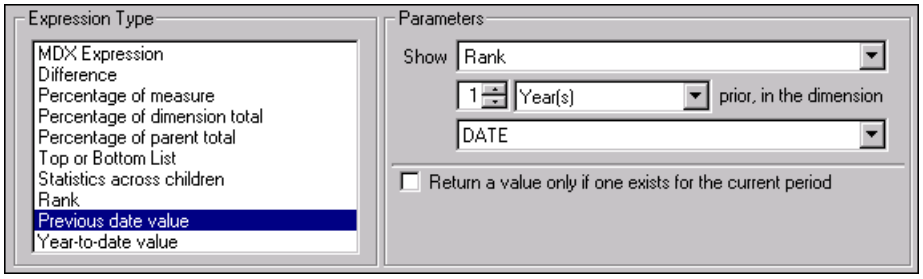
In a Pivot Table, the value in a cell is the intersection of a pivot. In the Statistics Across Children expression, "current member" refers to a cell that is current in context (selected or in view). The calculation retrieves the information for the current member as well as any children of the current member's dimension. For more information about parent and child dimensions, see "About Dimension Hierarchies and Members" on page 74.

Rank



This expression ranks the entries for a selected dimension by a value you select. For example, you may want to **Rank** the members of your "Fund" dimension **by** the "Gift count" each has brought in, so you can analyze how each of your funds is performing.

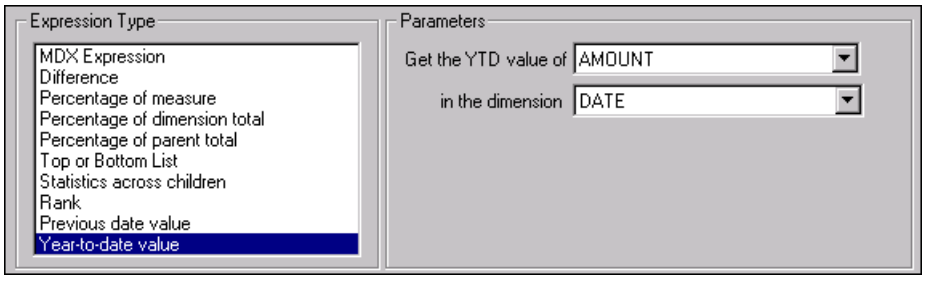
Previous Date Value



You can use the wizard to create an expression that gets the value of a measure in a previous time period you select. For example, you may have created a "Rank" calculated member for your Appeals, and now need a calculation to **Show** the value of your funds' "Rank" "1 year" **prior, in the dimension** "Date."

When you mark the **Return a value only if one exists for the current period** checkbox, if no value exists in the selected time period, no value shows for the calculated member.

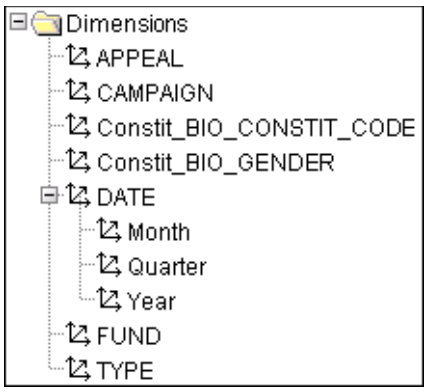
Year to Date Value



You can create an expression that calculates the year to date value for a member. For example, you may want to **Get the YTD value of** your total gift "Amount" **in the dimension** "Date" for use in comparisons with other years' giving amounts.

About Dimension Hierarchies and Members

You can view the hierarchy between parent and child dimensions. In the following example, the Date dimension is parent to the Month, Quarter, and Year dimensions.



All dimensions are part of a hierarchy, but for some dimensions the hierarchy is implied. In the previous example, the Fund dimension may not appear to be a child of any other dimension, but it is actually a child of the "All Member" dimension. Members are the items that make up dimensions. All Member is an implied parent for every dimension.

We can examine this principle by creating Percent of Dimension Total and Percentage of Parent Total members that are both based on showing the gift **Amount** as a percentage by **Date**.

The two calculated members can appear on a Pivot Table as follows:

Year ▼ Quarter Month	PercentDimTotal	PercentParentTotal
⊞ 2001	6.03%	6.03%
⊞ 2002	40.47%	40.47%
⊞ 2003	27.50%	27.50%
⊞ 2004	26.01%	26.01%
Grand Total	100.00%	

In this display, the **PercentDimTotal** and **PercentParentTotal** amounts match exactly except for the **Grand Total** row. This is because for every value except **Grand Total**, the percentage of the Date dimension by Year, and the percentage of the parent of the Year Dimension (Date) are the same values.

The **Grand Total** row however, is different because it is actually displaying the All Member dimension. Because All Member has no parent, no value displays for the **PercentParentTotal** member.

When we expand the table to show children of the Date dimension, we begin to see some more variations between the two calculated members.

Year	Quarter	Month	PercentDimTotal	PercentParentTotal
⊞ 2001			6.03%	6.03%
⊞ 2002			40.47%	40.47%
⊞ 2003			27.50%	27.50%
⊟ 2004	⊞ Quarter 1		17.02%	65.44%
	⊞ Quarter 2		3.18%	12.23%
	⊞ Quarter 3		2.16%	8.30%
	⊞ Quarter 4		3.65%	14.03%
	Total		26.01%	26.01%
Grand Total			100.00%	

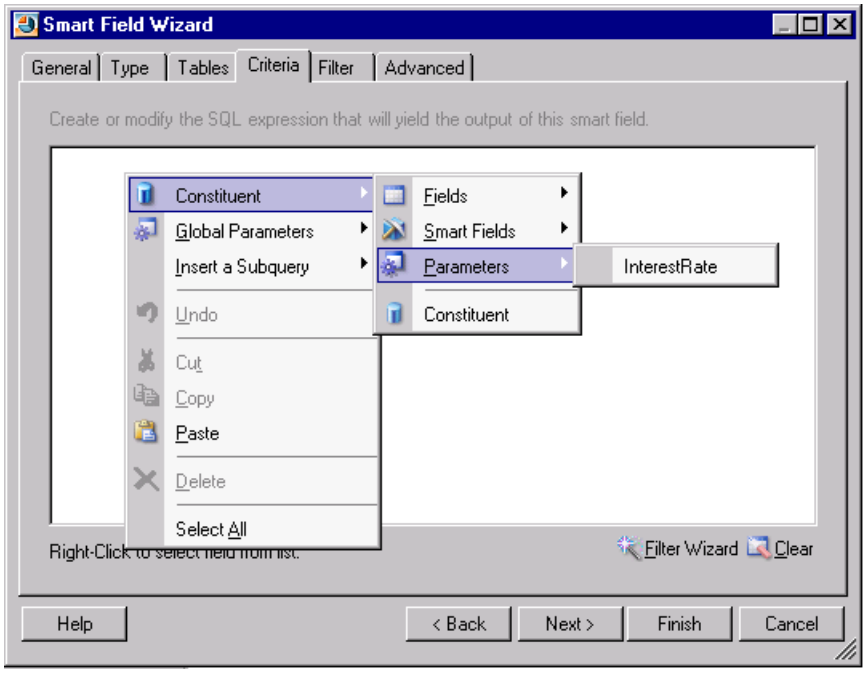
Differences in the values for the two calculated members now appear. For example, in the **Quarter 1** row, the **PercentDimTotal** column current member displays the percentage of Quarter 1 for the entire Date dimension, while the **PercentParentTotal** current member now displays the total of Quarter 1 for its parent dimension, the year 2003. The **Total** row contains the same value for both members, because it represents the Year dimension (in this case 2003).

Parameters

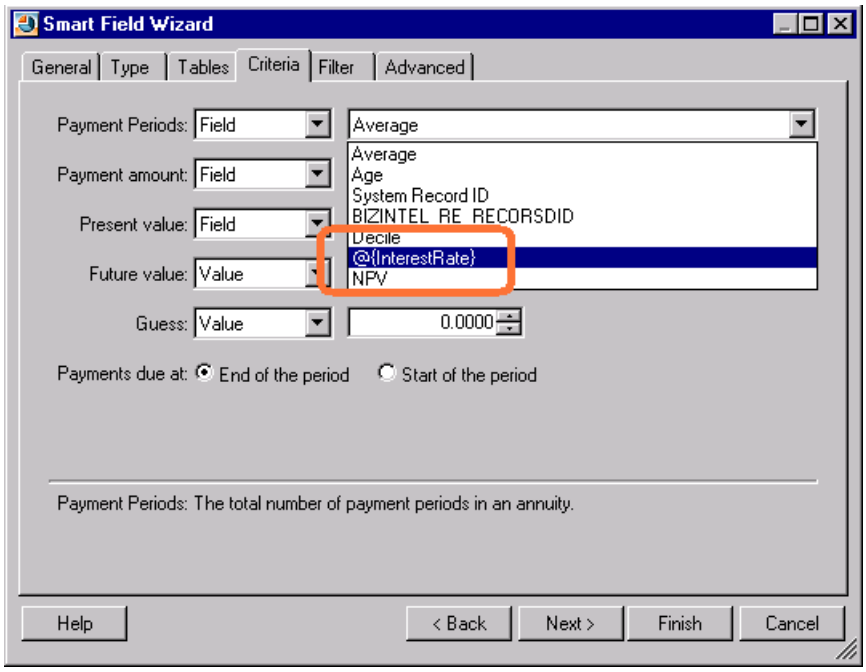
Parameters enable you to store field values in one place instead of in a separate column of each table. The parameter values can be static or based on expressions. Storing a value as a parameter reduces maintenance by enabling other tables and functions to reference it, instead of including the specific value in each function.

As a basic example, you may have ten different smart fields that filter on gift type equals cash. You can reference that filter in a parameter instead of including the actual filter on each smart field. Then, if you later decide you want to perform the same analyses on your pledge gifts, instead of changing the filter on each smart field, you could change it once in the parameter and all the smart fields would return their results accordingly.

When creating many types of smart fields, parameters you have previously saved are available to include in the Criteria of the smart field. On some smart fields, when you create the expression that determines the content of the field, you can right-click and select a parameter. You can similarly include parameters in statements on the Filters tab.

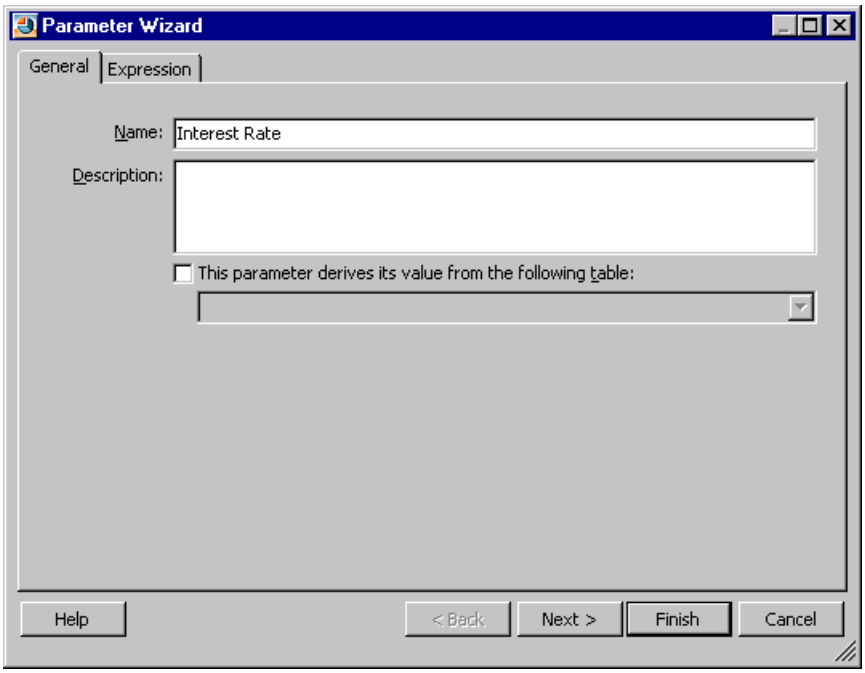


On other types of smart fields, when you specify criteria, parameters are available along with fields in dropdowns. Parameters are indicated by the @ symbol at the beginning and surrounded by brackets.



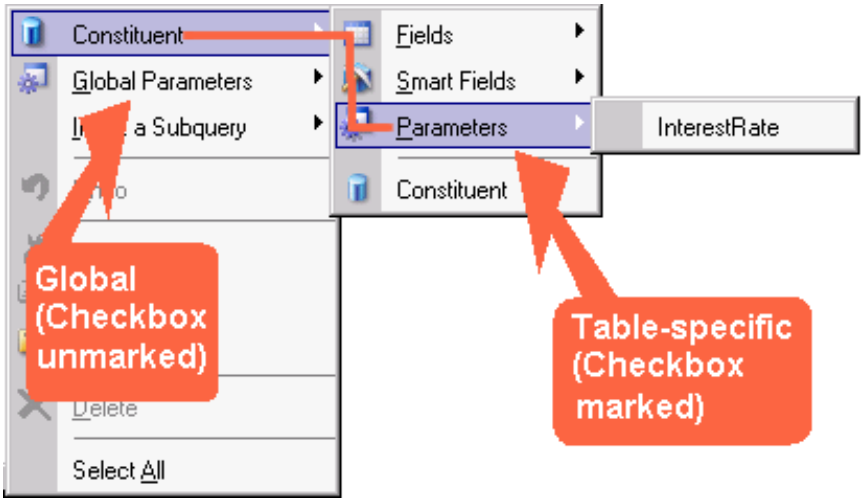
➢ Creating a parameter

1. In the **Configuration** tree view, click the plus sign beside the data mart from which you want to create a Parameter. Right-click on **Parameters** and select **New**. The Parameter Wizard screen opens to the General tab.

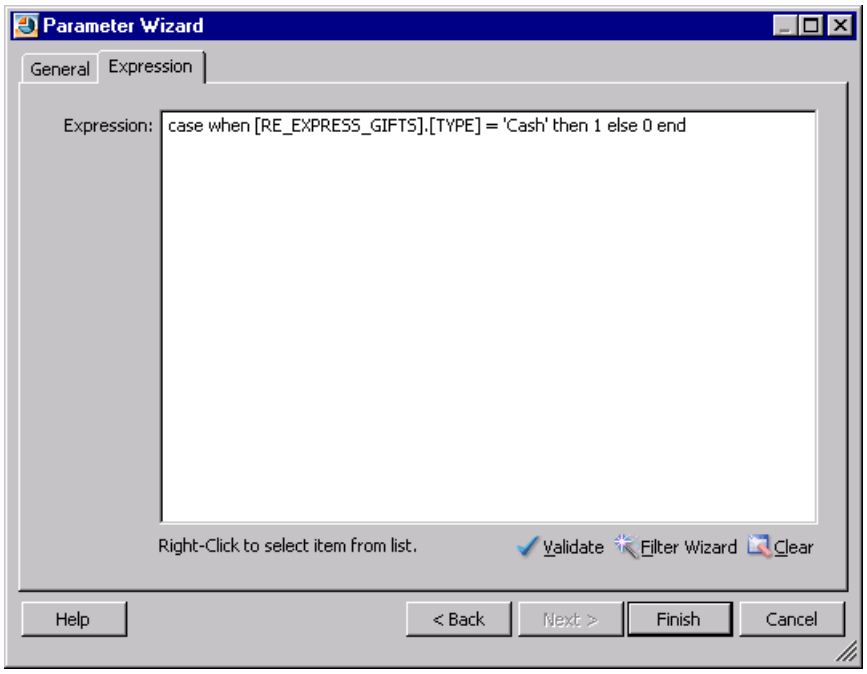


2. Enter a **Name** and optionally a **Description** for the parameter. The name cannot contain spaces or any other punctuation.
3. If you want the parameter to only be available when a certain table has been selected in a smart field's properties, mark the **This parameter derives its value from the following table** checkbox and specify the table.

   If you do not mark the checkbox, the parameter will be global and available from any smart field.



4. Select the Expression tab.



5. To create your parameter, enter a value or SQL statement in the **Expression** box.

   If the parameter is table-specific, you can use the Filter wizard (similar to the Expression wizard) to assist you in creating an expression. For more information, see: “Parameter Filter Wizard” on page 78.

6. Click **Finish**. The parameter name now appears in the tree view.

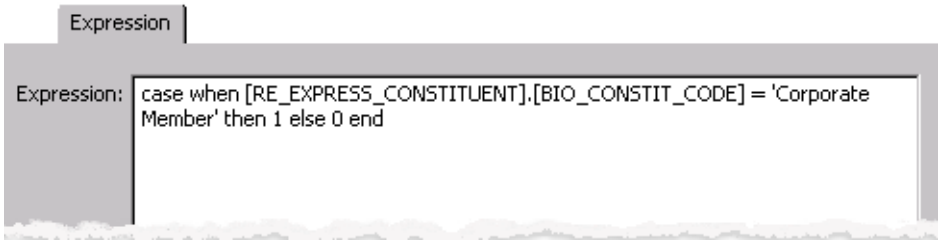
When creating SQL statements, always use true table names (not “friendly” names).

Parameter Filter Wizard

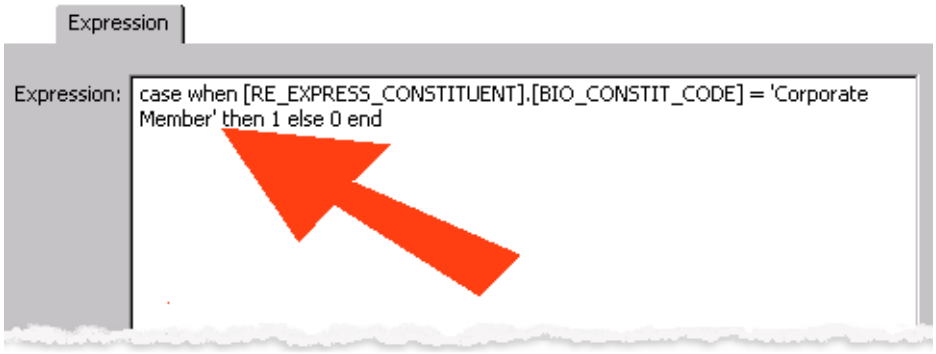
When creating parameters that are specific to a certain table (not global), the Filter Wizard is available on the parameter properties Expression tab. The Filter Wizard is very similar to the Expression Wizard and Filter Wizard that can be used to create and filter several types of smart fields, but there are key differences. The main difference is that the Filter Wizard creates an expression that consists of a case statement that returns a default value of “1” for True (not filtered) and “0” for False (filtered).

When you click **Filter Wizard** on the Expression tab, the same conditions are available to help you create an expression as in the Expression Wizard. For more information about these, see “Expression and Selection Wizard Conditions” on page 84.

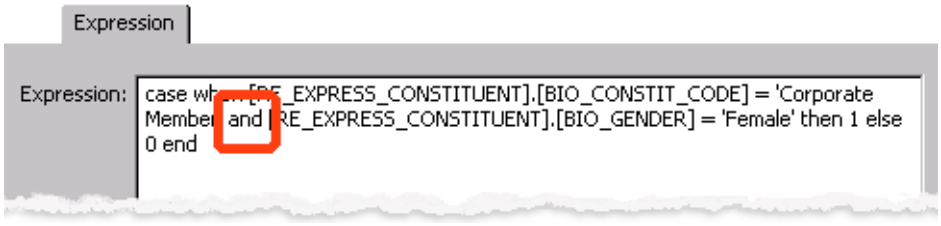
When you close the wizard, you return to the Expression tab where your statement appears in the **Expression** box.



If you want to add another condition to the expression, place the cursor at the end of the first condition and before the “then” in the case statement.



Then click **Filter Wizard** and create the additional statement. When you return to the Expression tab, “AND” is added to the statement followed by the second condition.



You can add as many filter conditions as necessary in this manner.

Tips for Creating Parameters

When manually writing an expression for a parameter, you should explicitly convert to the data type you want the parameter to output. If you do not, *SQL Server* guesses which data type the output should be and the result may not be what you intended.

For example, if you use the following SQL expression in a Parameter, *SQL Server* would attempt to output the result as an Integer:

```
CASE WHEN 1>0 THEN 'test' ELSE 0 END
```

In this case, “test” is a string and “0” is an Integer. If the string is returned, it may cause data type errors in a smart field that uses the parameter.

Views

Views enable you to focus on specific data that is of interest to you, and on specific tasks for which you are responsible. Views are database objects that can be referenced the same way as a table. You create views by specifying these objects in a SQL statement. The Query Wizard is available to help you create the SQL statements that define Views. For more information, see “Expression Wizard” on page 83.

You can define frequently used statements and subqueries as views. This means your users do not have to specify all the conditions and qualifications each time an additional operation is performed on that data. For example, a complex query with subqueries that retrieves data from a group of tables can be added as a single View. The View simplifies access to the data because the underlying query does not have to be written or submitted each time the report is generated; the View is queried instead.

Dependency checking is not available for Views that extend across multiple data marts. For more information, see “Dependencies” on page 21.

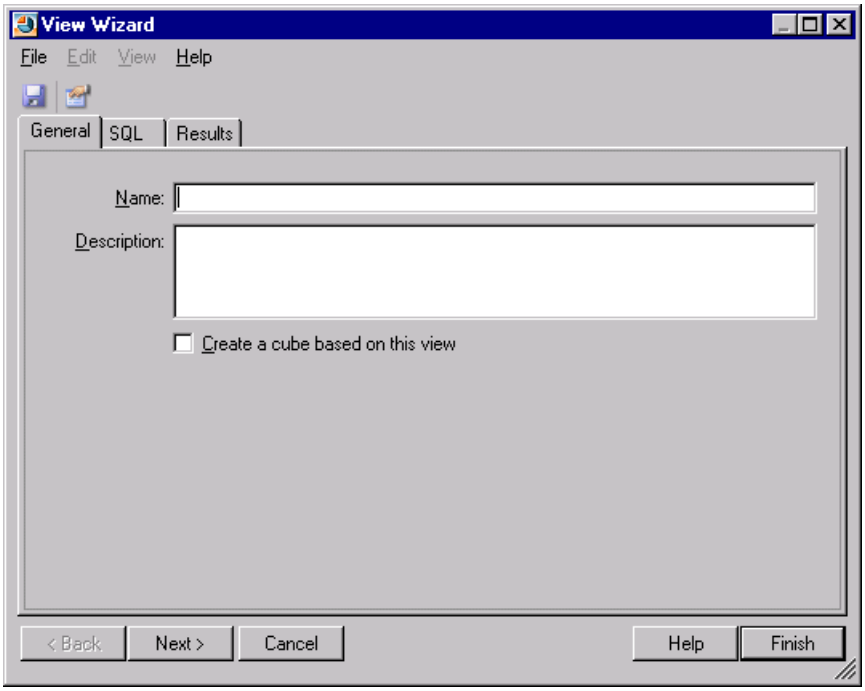
Views are good analysis tools because you can create cubes based on them. Additionally, Views are especially well-suited for use in *Crystal Reports*. Because Views are presented as a single table (even though they may actually query multiple tables), they are easily manipulated in *Crystal Reports* without using visual linking and other complex operations. You can export the contents of a View in Excel, XML, or character delimited formats.

➢ Creating a Data View

1. In the **Configuration** tree view, click the plus sign beside the data mart from which you want to create a View. Right-click on **Views** and select **New**. The View Wizard screen opens to the General tab.
2. On the General tab, specify basic information such as a name and description of the view. For more information, see the next procedure.
3. On the SQL tab, specify the SQL statement that determines which records are included in the view. For more information, see “Completing the View SQL tab” on page 82.
4. The Results tab displays the first one hundred records included in the View. For more information, see “Completing the View Results tab” on page 83.
5. Click **Finish**. A message informs you that view has been saved. If you want to process the view now, click **Yes**. After the view processes, you return to the Views page where the new view appears.

➢ Completing the View General tab

1. While creating or editing a View, select the General tab.

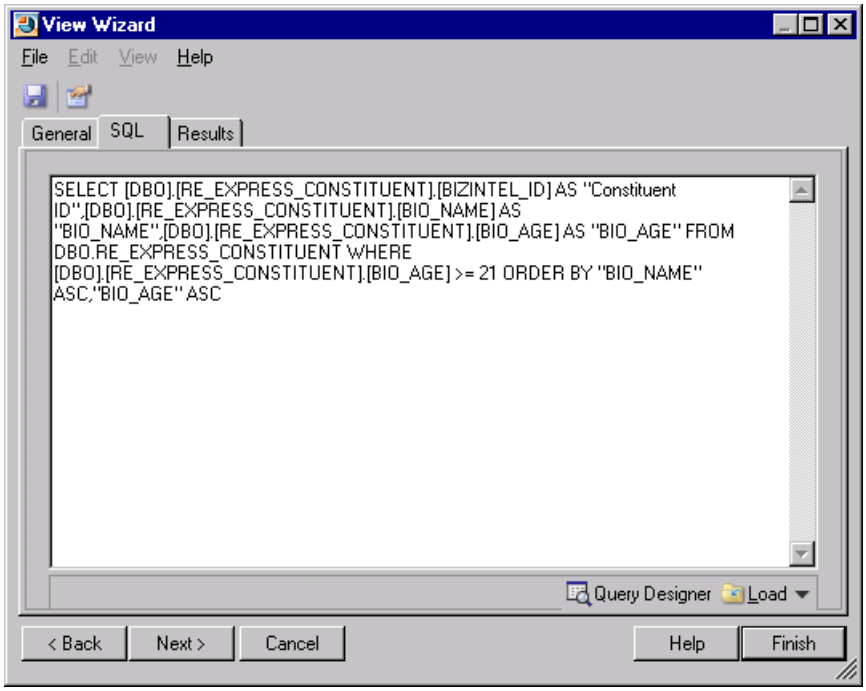


2. Enter a **Name** and **Description** for the View. This information appears on the main Views page of *Configuration*.
3. Mark the **Create a cube based on the view** checkbox so you can create Pivot Tables and Charts to analyze the data in the View.
4. If you are creating a new View, click **Next** to access the SQL tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing View, click **OK** to save your changes and exit the View Wizard.

➢ Completing the View SQL tab

1. While creating or editing a View, select the SQL tab.



   You can include SQL statements in a variety of ways.

When creating SQL statements, always use true table names (not “friendly” names).

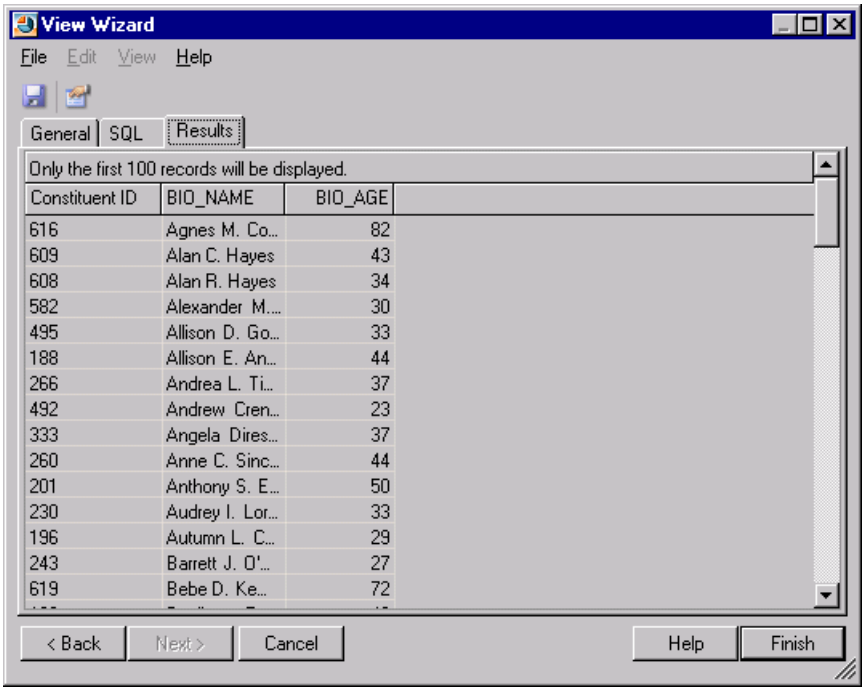
2. You can enter any valid SQL statement directly into the text box.
3. When you click **View Designer**, you access the View Designer to assist you in creating a SQL statement.
   a. On the Source Tables screen, click the right arrow to move the tables you want to include in the View from the **Available Tables** box to the **Selected Tables** box. Click **Next**. The Fields screen appears.
   b. Click the right arrow to move the fields you want to include in the View from the **Available Fields** box to the **Selected Fields** box. Click **Next**. The Condition screen appears.
   c. You can filter the records included in the View using SQL statements. You can enter a SQL statement directly in the box, or use the Expression Wizard to help you create a statement. For more information, see “Expression Wizard” on page 83. Click **Next**. The Sort screen appears.
   d. Specify the fields on which you want to base sorting for the View and specify whether the values for the fields should be sorted in ascending or descending order.
   e. Click **Finish**. You return to the SQL tab.
4. When you click **Load**, you can select either File or Query to access a SQL file or previously saved query. Once you select the file or query, the SQL appears in the text box on the SQL tab.

5. If you are creating a new View, click **Next** to access the Results tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing View, click **OK** to save your changes and exit the View Wizard.

➢ Completing the View Results tab

1. While creating or editing a View, select the Results tab.


View Wizard
File Edit View Help
General SQL Results
Only the first 100 records will be displayed.
Constituent ID BIO_NAME BIO_AGE
616 Agnes M. Co... 82
609 Alan C. Hayes 43
608 Alan R. Hayes 34
582 Alexander M.... 30
495 Allison D. Go... 33
188 Allison E. An... 44
266 Andrea L. Ti... 37
492 Andrew Cren... 23
333 Angela Dires... 37
260 Anne C. Sinc... 44
201 Anthony S. E... 50
230 Audrey I. Lor... 33
196 Autumn L. C... 29
243 Barrett J. O'... 27
619 Bebe D. Ke... 72
< Back
Next >
Cancel
Help
Finish

   The Results tab displays the first 100 records data organized in columns resulting from your Criteria, Output, and Sort field selections.

2. If you are editing the properties of an existing View, click **OK** to save your changes and exit the View Wizard. If you are creating a new View, click **Finish** to save it and return to the main Views page.

Expression Wizard

The Expression Wizard is available to help you create several types of smart fields, and to create filters for numerous functions. To use the Expression Wizard, on the Select Field screen, select a field for which you want to create an expression. All fields in the selected target table (including any other smart fields you have already created) are available.

Click **Next**. The Expression Wizard Select Condition screen appears. Select a **Condition** and specify the **Values for** that condition. The available values vary depending on the selected condition.

Click **Finish**. You return to the screen from which you accessed the wizard and your expression now appears in the **Expression** box.

Expression and Selection Wizard Conditions

The following conditions are available when creating selections or expressions.

Wildcard characters are available with some operators. Wildcards include ? for a single character, * for a series of characters, and [ ] for a range of characters or several characters.

Is equal to. When you choose this condition, the records in the field must have the exact value you define. For example, if you choose **Constituency_Code** "is equal to" Board Member, only records with the exact entry of Board Member in the **Constituency_Code** field are selected.

Is not equal to. When you choose "is not equal to" as your condition, the records in the field must not match the value you define. For example, if you specify **Constituency_Code** "does not equal" Board Member, the condition selects every record that does not have Board Member entered as the constituent code.

Is one of. Choosing "is one of" as the condition means that records selected must have at least one of the values you define. The "is one of" condition acts as an "or" between the entries you select. For example, if you select **Campaign_Category** "one of" Annual, Capital, and Event, records selected must contain on of the campaigns chosen.

Is not one of. Choosing the "is not one of" condition means that records selected must not contain any of the values you define. For example, if you select **Campaign_Category** "is not one of" Annual, Capital, and Event records selected must not contain any of the campaigns you defined.

Is less than. Selecting the "is less than" condition limits the records selected to those with an entry less than the value you define. For example, if you select **Gift Amount** "is less than" $100, only those records with a gift amount of $99.99 or less are selected. Records with a gift amount of $100 are not included.

Is less than or equal to. Selecting "is less than or equal to" as the condition indicates that the records selected must have an entry less than or equal to the value you define. For example, if you select **Gift_Amount** "is less than or equal to" $100, only records with a gift amount of $100 or less are selected. This operator includes records with the value you selected, in this case $100.

Is greater than. If you select "is greater than" as your condition, the records selected must have a value greater than the one you define. For example, if you select **Gift_Amount** "is greater than" $100, only records with gift amounts of more than $100 are selected.

Is greater than or equal to. Selecting "is greater than or equal to" as your condition limits the records selected to those with a value greater than or equal to the one you define. For example, if you select **Gift_Amount** "is greater than or equal to" $100, only records with a gift amount of $100 or more are selected. This operator includes the value you selected, in this case $100.

Is between. When you choose "is between" as the condition, the records selected must fall within a range you define. This condition is inclusive. For example, if you select **Gift_Amount** "is between" $100 and $300, records with gift amounts between $100 and $300 are included. Amounts equal to $100 and $300 are also included.

Is not between. If you select this condition, records included must not fall within a range you specify. This operator is exclusive. For example, if you select **Gift_Payment_Amount** "is not between" $100 and $300, only records with gift payments of less than $100 and more than $300 are included. Gift payments between $100 and $300 are not included.

Is like. The "is like" condition enables you to use the "_" and "%" wildcard characters to replace a character or a set of characters in a field. This operator and the wildcard characters are particularly useful when you are not sure of the spelling of a name or if you suspect something might be misspelled. For example, if you select **Last_Name** "is like" B_rd, the program selects all records with a similar spelling for example, Berd, Bird, or Byrd. If you select a value of %son, the condition returns Johnson, Anderson, etc.

Is not like. The "is not like" condition selects the records that are not spelled like the entry you define. You can also use the "_" and "%" wildcard characters with this operator.

Begins with. Selecting "begins with" as the operator means that records selected must have an entry beginning with the value you define. For example, if you choose **Last Name** "begins with" Bell, only constituents whose last name begin with "Bell" are selected (for example, Bell, Bellmont, or Bellingham). You can use wildcard characters with this operator.

Does not begin with. When you choose "does not begin with" as the operator, the records selected must not have an entry beginning with the value you define. For example, if you choose **Last Name** "does not begin with" Bell, only constituents whose last name does not have "Bell" at the beginning are selected. You can use wildcard characters with this operator.

Ends with. Selecting "ends with" as the operator means that records selected must have an entry ending with the value you define. For example, if you choose **Last Name** "ends with" son, only constituents whose last name ends with "son" are selected (for example, Johnson or Williamson). You can use wildcard characters with this operator.

Does not end with. When you choose "does not end with" as the operator, the records selected must not have an entry ending with the value you define. For example, if you choose **Last Name** "does not end with" son, only constituents whose last name does not have "son" at the end are selected. You can use wildcard characters with this operator.

Is blank. If you select "blank" as the operator, the records selected must have a blank in the field you specify. For example, if you choose constituent **ID** is "blank", the program selects records with an empty **ID** field.

Is not blank. When "is not blank" is selected as the operator, the selected records must have an entry in the field you specify. For example, if you select constituent **ID** "is not blank", the program selects all records with an entry in the **ID** field.

Contains. Choosing "contains" as the operator selects records containing the defined value anywhere in the field. For example, if you select **Last Name** "contains" G, any records with the letter "G" anywhere in the **Last name** field are selected. You can use wildcard characters with this operator.

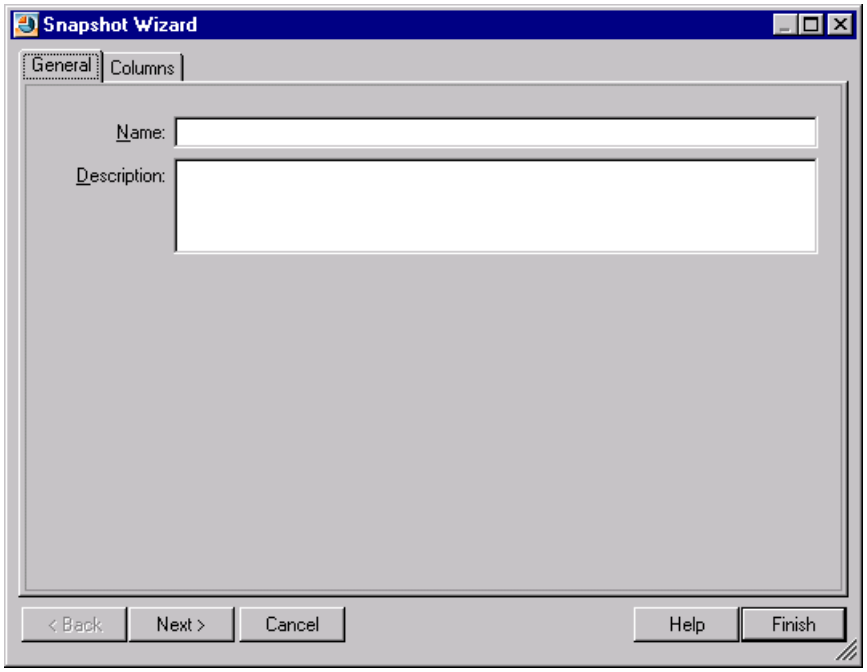
Does not contain. Choosing “does not contain” as the operator selects records that do not have the defined entry anywhere in the field you specify. For example, if you select **Last Name** “does not contain” G, only records without a “G” anywhere in the **Last name** field are selected. You can use wildcard characters with this operator.

Snapshots

Snapshot tables enable you to take a “picture” of data as it appears at a certain point in time. You can use snapshot tables to compare data from a certain time with current refreshed data. When you create a snapshot table, you can include all the fields or only selected fields from a source table.

➢ Creating a snapshot table

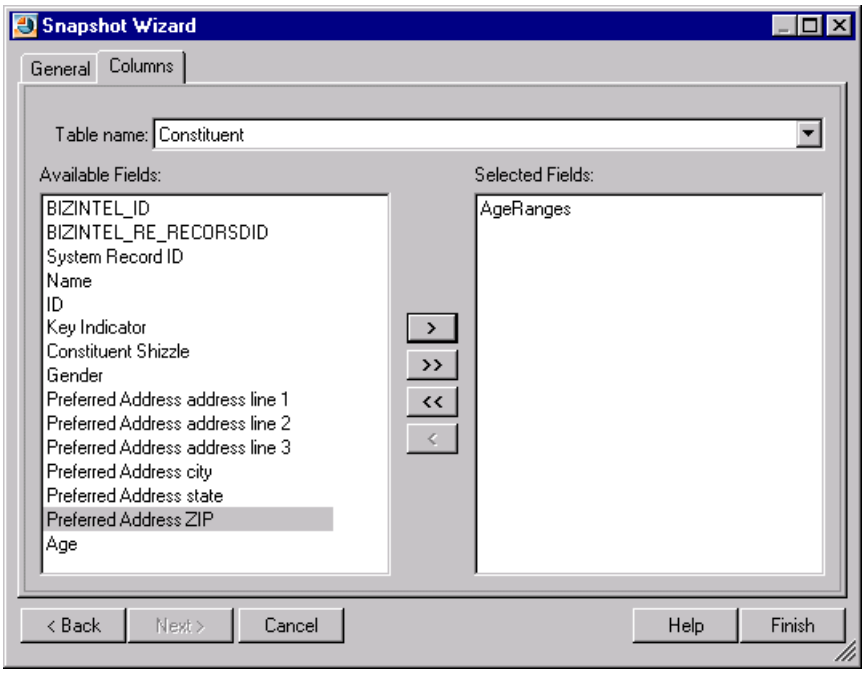
1. On the *Configuration* tree view, click **Snapshots** under the data mart containing the table of which you want to make a snapshot.
2. Click **New** in the action bar. The Snapshot Wizard screen appears on the General tab.



3. Enter a **Name** to identify the snapshot field in the console. You must use only letters, digits, and underscores in the name. You cannot include spaces or any other characters.

   You can also enter a **Snapshot Description**. This information can be helpful to identify the snapshot field when you have many of them.

4. Click **Next**. The Columns tab appears.



5. In the **Table name** field select the table containing the field or fields you want to snapshot.
6. The **Available Fields** in the selected table appear on the left. Use the arrow buttons to move fields into the **Selected Fields** box.
7. Click **Finish**. The snapshot table name now appears in the tree view.

Monitored Fields

Monitored fields track changes to your data over time. This enables you to discover trends in your data. Any field in a data mart, including previously created smart fields, can be designated as a monitored field.

Fields you specify to be monitored are processed each time a data mart is refreshed. If ***The Information Edge*** detects a change in the value of the monitored field, the old value, new value, and date processed are recorded. For example, you may have created a “donor level” smart field that separates donors into bins of “Platinum,” “Gold,” and “Silver” based on total giving amount. By making this a monitored field, you can track changes to see how your donors move between the “Platinum”, “Gold”, and “Silver” levels. When the data mart is first processed, the current giving level is recorded for each donor. The next time the data mart is processed, any changes to the donor level are recorded. A new entry is created for any donors who changed levels since the last time the data mart was processed. The new entries show the previous giving level, new giving level, and date the level changed for these donors.

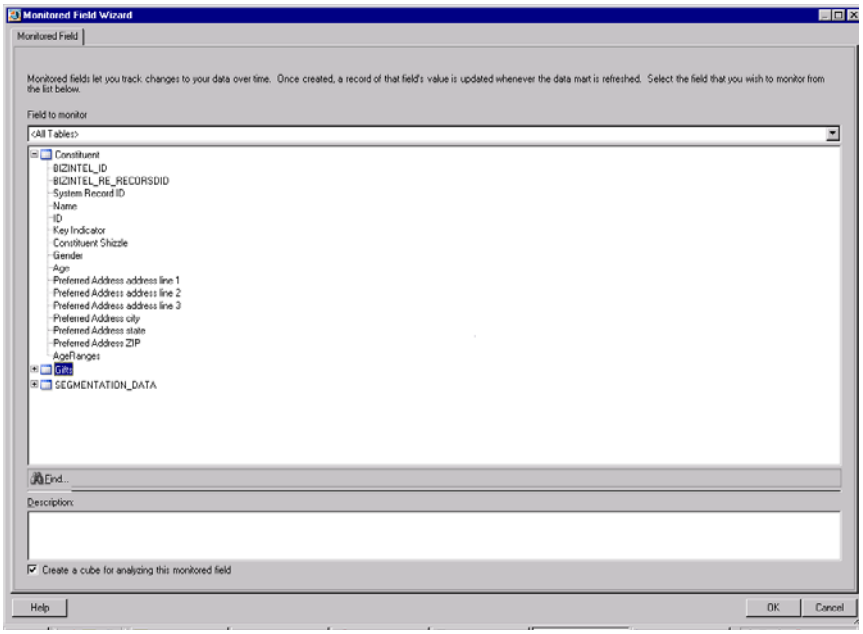
You can create a cube for each monitored field, enabling you to create Pivot Tables and Charts, and perform other analyses on the monitored information. For the above example, you can create a pivot table that shows how many donors moved from the Silver to Gold level, and you can see when the changes occurred by including the date changed in your pivot. You can export the contents of a monitored field in Excel, XML, or character delimited formats.

Records with a NULL value are not included in monitored fields. Therefore, you may notice that a monitored field does not contain as many records as the table on which it is based. When a NULL record changes values, it is added to the monitored field with the new value and the previous value as NULL.

After you designate a monitored field, you can then create a **Monitored Field Query** type smart field based on that field. The smart field specifies a time period in which to track the monitored field's value. For example, using the previous "donor level" example, after you specify it as a monitored field, you can use it as the basis for a **Monitored Field Query** smart field. This field can show changes during any time frame you select; for example, you may want to track donor status weekly or monthly.

➢ Adding a Monitored Field

1. On the **Configuration** tree view, right-click on **Monitored Fields** and select **New**. The Monitored Field tab appears.



2. Select the field you want to monitor and optionally provide a **Description** to further help you identify it in *Configuration*.
3. Mark the **Create a cube for analyzing this monitored field** checkbox if you want to perform analyses on the monitored information.
4. Click **OK** to save the monitored field. A message appears asking if you want to process the field now. Click **Yes** to process the field now, or **No** if you want to process it at a later time.

   You return to the Monitored Fields page where detail information appears for the field. Now you can create a smart field that enables you to track the value of the monitored field during a specified time period. For example, you may want to track changes in membership level or income monthly. That way you can view donors' current membership status as well as their status the previous month.

   For more information about Monitored Field Query smart fields, see "Monitored Field Query" on page 304.

Reports

In *Configuration*, you can create Pivot Tables, Charts, Data Analyzer Views, and Crystal Reports to help you analyze your data. Additionally, you can view all reports created by your users. An administrator can delete any user-created report. If it is viewable by others, the report is removed from all views and dashboards.

You can move the location of a report to another folder. If you move a report that is viewable by others into a folder that is not, the report is removed from any other users' views and dashboards.

For more information about creating and using reports, see "Analytics" on page 141.

Exports

You can export information from tables within your data marts. You can export the data from as many fields within a table as you wish. For example, you may want to create an export containing table or segmentation data to send to a mailing or fulfillment house. For more information specific to exporting segmentations with the optional module *Marketing Segmentation*, see "Exporting Segmentations" on page 194.

Do not confuse ***Information Edge*** Export functionality with ***Raiser's Edge*** or ***Financial Edge*** export. ***Raiser's Edge*** export is used to create data marts for ***The Information Edge***. ***Information Edge*** Export functionality enables exporting information from ***The Information Edge*** for use in other programs.

You can define an export that creates a standalone Pivot table. For more information, see "Excel Pivot Exports" on page 95. Additionally, if you have the *Postal Discounts* optional module, you can create an export of records using country specific mail sort options. For more information, see "Postal Discount Exports" on page 97.

Exports can be in character separated value, Excel, or XML formats. In a character separated export, you select the field separator. The XML format describes the data in your export file and provides a consistent means to share information. You can create filters so only selected records are exported.

You can create export definitions for Monitored fields, Views, and tables directly from those items; however, those exports are not saved on the Export Definitions page.

➢ Creating an export definition

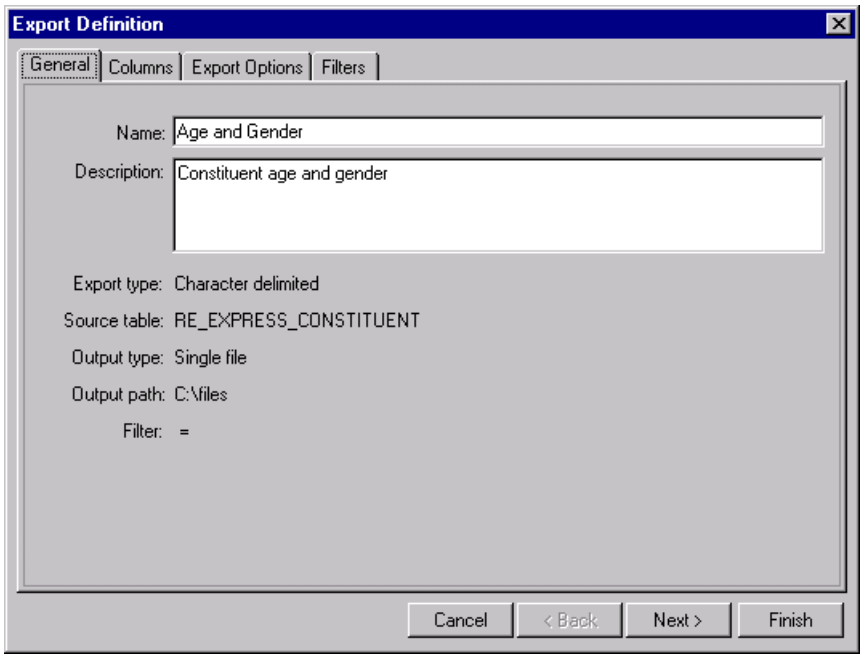
If you are creating an export directly from a monitored field, view, or table, click **Export** in the action bar and skip to step 4 of this procedure.

1. On the tree view, click the plus sign beside the name of the data mart for which you want to create an export.
2. Right-click on **Export Definitions** and select **New Export Definition**. The Export Definition screen appears on the General tab where you can provide a name and description for the export. For information about the General tab, see the next procedure.
3. You must specify the table containing the fields you want to export and then select the fields themselves. For more information, see "Completing the Export Columns tab" on page 91.

4. You can specify options such as the export type, and the path and file name. For more information, see “Completing the Export Options tab” on page 92.
5. You can filter the items that appear in an export based on a field value or SQL statement. For more information, see “Completing the Export Filters tab” on page 94.

➢ Completing the Export General tab

1. While creating or editing an export definition, select the General tab.

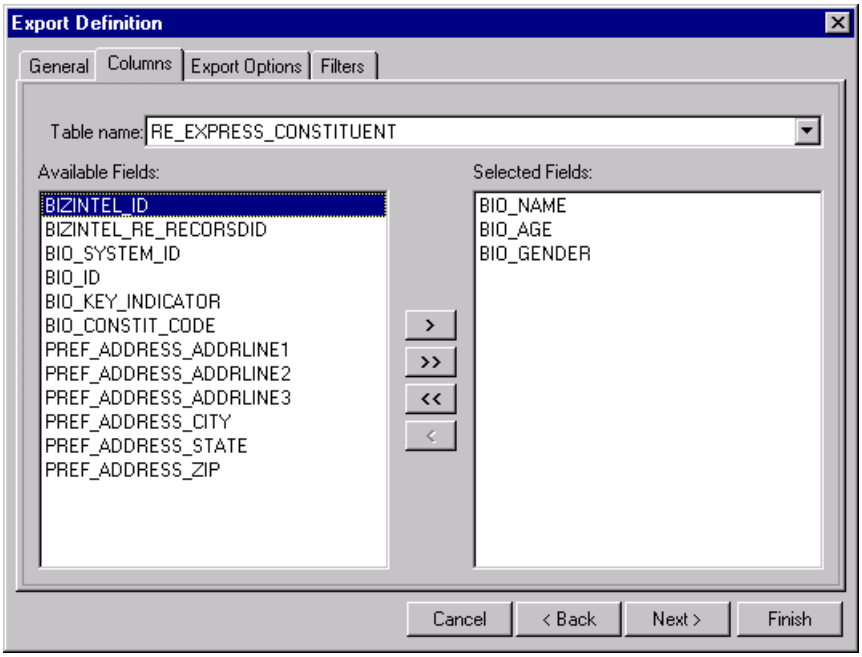


2. Enter a **Name** and **Description** for the export. The rest of the information on the tab appears for reference purposes and is actually specified on the other tabs of the Export Definition screen.
3. If you are creating a new export definition, click **Next** to access the Columns tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs.

➢ Completing the Export Columns tab

1. While creating or editing an export definition, select the Columns tab.



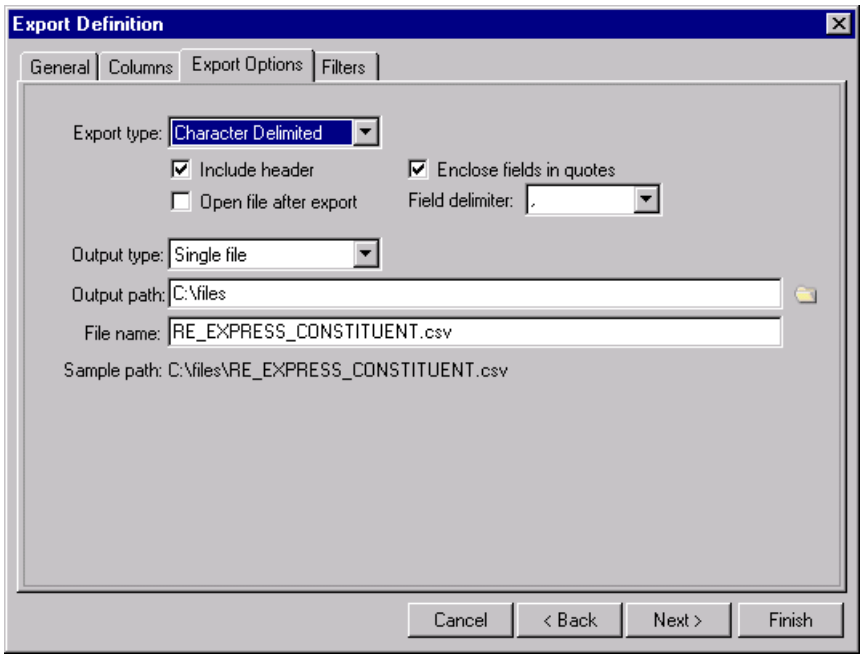
2. The tables for the selected data mart are listed in the **Table name** dropdown. Select the table for which you want to create an export.
3. The fields included in the table you selected for export are listed in the **Available Fields** box. Select the fields you want to include in the export, and use the right arrow to move them into the **Selected Fields** box.
4. If you are creating a new export definition, click **Next** to access the Export Options tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs.

The **Table Name** field is not available on Postal Discount exports because the table is specified on the Address Fields tab. Additionally, the **Available Fields** on the Columns tab include address processing fields (indicated by brackets surrounding the name). These fields vary depending on the country setting and whether or not the program has been enabled for address certification (CASS). Fields are exported in the order in which they list here.

➢ Completing the Export Options tab

1. While creating or editing an export definition, select the Export Options tab.



2. Select an **Export type**. If you select Character Delimited, you can mark checkboxes to indicate whether you want to **Include header** and **Open the file after export** in the program associated with the csv file extension on your computer. You can also mark a checkbox to **Enclose fields in quotes** and select the character you want to use to separate fields in the **Field delimiter** field.

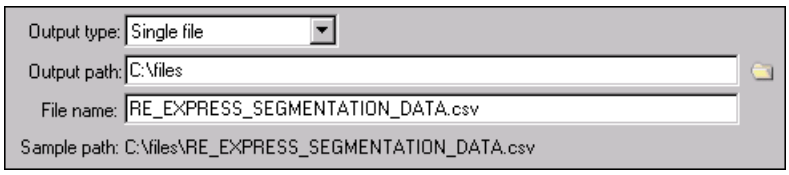
   If you select the export format of Excel, you can specify whether you want to **Include header** and whether you want to **Open the file after export**.

   If you select the XML export format, you can specify whether you want to **Open the file after export** in the program associated with the xml file extension on your computer.

   When creating a Postal Discount export, the **Use fixed column export** checkbox is available. If you leave this checkbox unmarked, during export, data shifts to the left to eliminate any blank columns. Mark this checkbox if you want to keep any blank columns that may be included in the export.

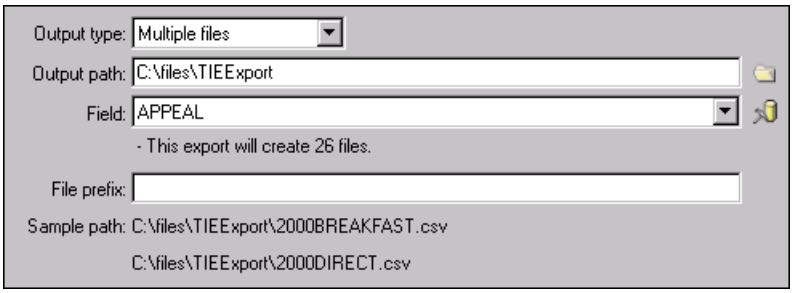
Excel exports can contain a maximum of 65, 536 rows per file.

3. In the **Output Type** field, specify whether the export will be a single or multiple files, and whether the files will be contained in one or more folders. If you select “Single File” several fields appear.



Use the **Browse** button to enter the **Output path** where you want to save the export. Specify a **File Name** for the export.

4. If you select an **Output type** of "Multiple Files" several fields appear.



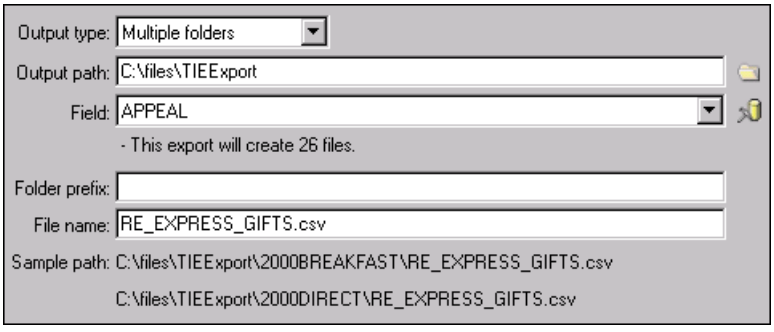
5. Use the **Browse** button to enter the **Output path** where you want to save the export. Select the **Field** that will be used to generate the export files. The values in this field determine the export files that are created.

   Each file will contain the information you select on the Columns tab of the Export Definition screen. For example, on the Columns tab, you can select the Gifts table and specify to include the Type, Amount, and Date fields. Then on the Export Options tab, you can select "Appeal" as the **Field**. This results in a separate export file being created for each appeal that lists the types, amounts, and dates for gifts given to that particular appeal.

   You can also optionally specify a **File prefix** to appear in front of each file name in the export.

   For most exports, the number of files that will be created based on your selections appears on screen. Some selections may create numerous files. For example, if you base the export on the BIO_NAME field, depending on the number of records in your database, you could create tens of thousands of export files.

6. If you select an **Output type** of "Multiple Folders" several fields appear.



   Use the **Browse** button to enter the **Output path** where you want to save the export. Select the **Field** containing the values by which the export folders will be named. You can also optionally specify a **Folder prefix** to appear in front of each folder created in the export.

   Specify a **File Name** for the export file that will be created in each folder.

When you create exports on a client machine, you can specify the **Output path** on the client machine. However, when you specify in a data mart's properties that exports process automatically each time the mart is processed, because the Schedule function runs on the server, it attempts to output the export to the specified path on the server. If the path does not exist on the server, the export fails. If you are scheduling automatic processing of exports in the mart, ensure the same path exists on the server to enable the export to process.

If you are creating an export that will result in over ten files or folders and you have marked the **Open file after export** checkbox, a message informs you that ten is the maximum number of files that will be opened.

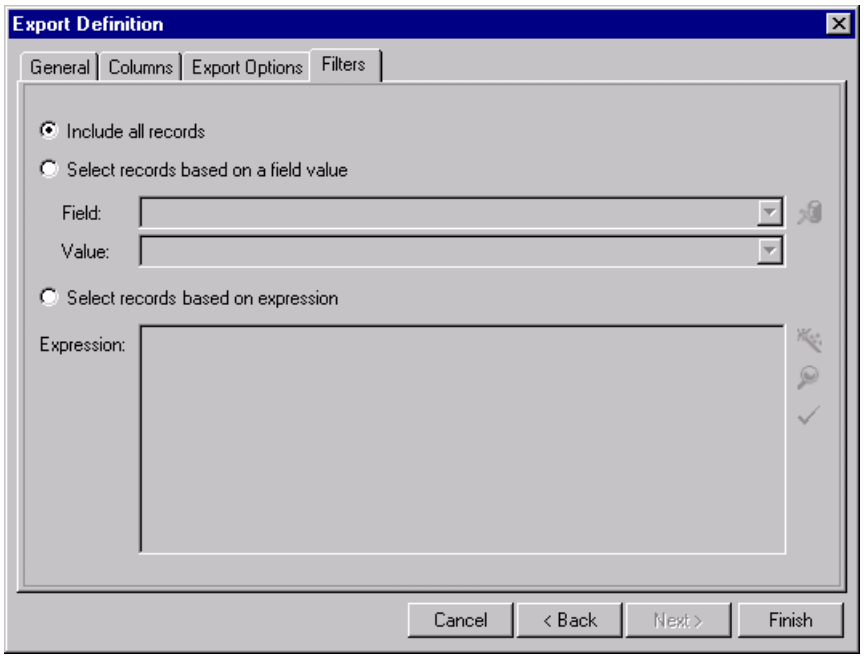
Similar to an export with multiple files, the number of folders this export will create appears on screen. Depending on your selections, some exports may create numerous folders.

7. If you are creating an export from the Export Definitions page, proceed to the next step. If you are creating an export directly from the Data tab of a table or Monitored field, or from a View, click **Finish** to save the export to the location you specified.
8. If you are creating a new export definition, click **Next** to access the Filters tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs.

➢ Completing the Export Filters tab

1. While creating or editing an export definition, select the Filters tab.



2. Mark the **Include all records** option to export all records in the fields you specified previously (or in the table, View, or Monitored field for which you are creating an export).

   Mark the **Select records based on a field value** option to include only those records with a specific field value. The **Field** dropdown contains only those smart fields in the source table you previously selected. Select the **Value** that records must have to be included in the export.

   Mark the **Select records based on expression** option if you want to use a SQL expression to filter records.You can enter text directly in the **Expression** box. Right-clicking in the box enables you to select from a list of fields in the target table.

   You can also use the **Expression** wizard to create your SQL expression. To access the wizard, click the button to the top right of the **Expression** box.

a. On the Select Field screen, select the field for which you want to create an expression. All fields in the selected source table (including any other smart fields you have already created) are available.

b. Click **Next**. The Select Condition screen appears. Select a **Condition** and specify the **Values** for that condition. The available values vary depending on the selected condition. For more information about the available conditions, see “Expression and Selection Wizard Conditions” on page 84.

c. Click **Finish**. You return to the Filter Options screen where your expression appears in the **Expression** box. Only records meeting the criteria of your expression will be included in the export.

3. You can click the **Check Syntax button** to ensure your expression is a valid SQL statement.

4. If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs. If you are creating a new export, click **Finish** to save the export.

   A message appears stating that the export has been saved and asking if you want to export the information now.

5. Click **Yes** to export the data and return to the console. Your export is saved in the location you specified on the Export Options screen.

Excel Pivot Exports

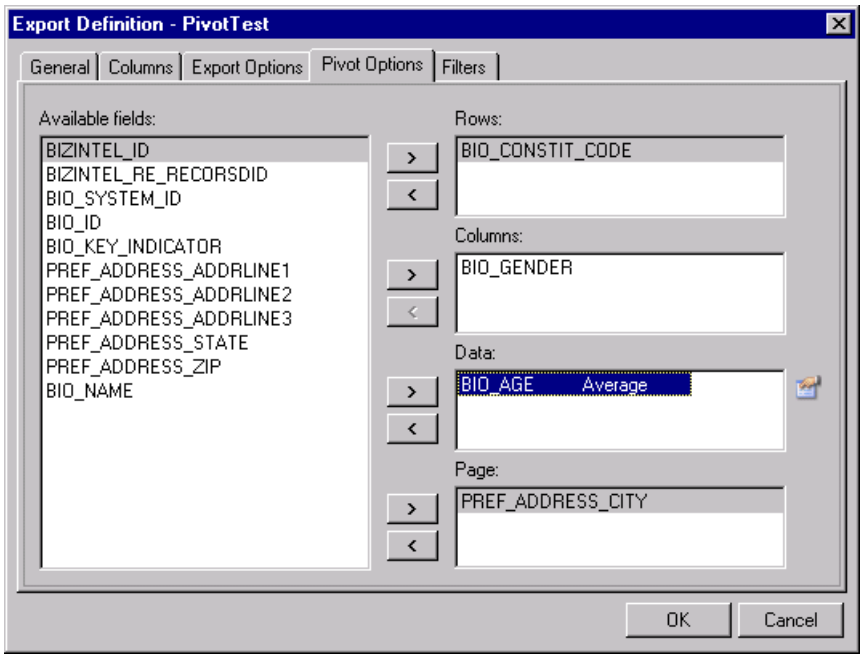
You can define an export that creates a standalone Pivot table including rows, columns, and data you specify.

An Excel Pivot Export contains the same tabs as a standard export as well as an additional tab, the Pivot Options tab. For information about completing the tabs on a standard export definition, see “Creating an export definition” on page 89.

Excel Pivot exports can contain a maximum of 65, 536 rows per file.

Completing the Export Pivot Options tab

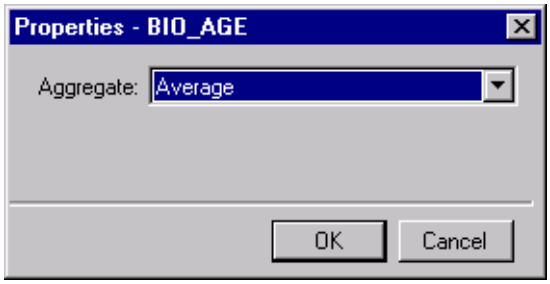
1. While creating or editing a Excel Pivot export definition, select the Pivot Options tab.



   The fields from the table you selected on the General tab appear in the **Available Fields** box.

2. Select fields and click the right arrow to specify that they appear as **Rows** and **Columns** in the export.

3. Select one or more fields that you want to represent **Data** in the Pivot table. When you click the right arrow to move a field into the **Data** box, the Properties screen appears.



4. Specify a method to **Aggregate** the data in the selected field. Click **OK** to return to the Pivot Options tab.

   If you later want to edit the aggregation properties, click the icon to the right of the **Data** box.

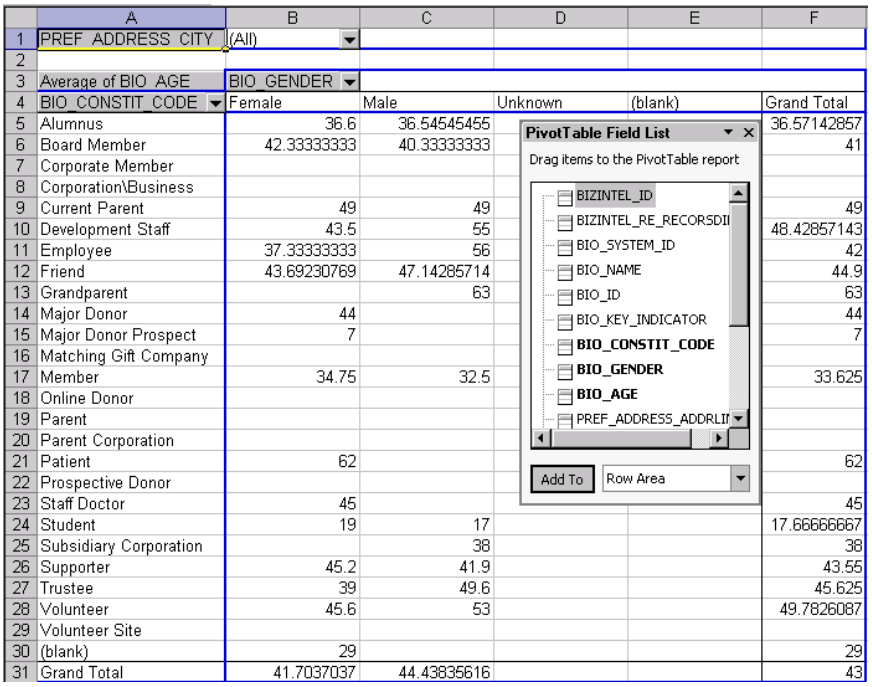
5. To enable filtering on one or more fields in the Pivot table, select the fields and move them into the **Page** box.

6. If you are creating a new Excel Pivot export definition, click **Next** to access the Filters tab. For more information about this tab, see "Completing the Export Filters tab" on page 94.

   If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs.

7. After you complete and process the export, when you open the exported file in *Excel*, Sheet 1 includes a flat file of all the fields you included in the **Selected Fields** box on the Columns tab.

   Sheet 2 contains a Pivot report with the rows, columns, data, and filters (page) you specified.



	A	B	C	D	E	F
1	PREF_ADDRESS_CITY	(All)				
2						
3	Average of BIO_AGE	BIO_GENDER				
4	BIO_CONSTIT_CODE	Female	Male	Unknown	(blank)	Grand Total
5	Alumnus	36.6	36.54545455			36.57142857
6	Board Member	42.33333333	40.33333333			41
7	Corporate Member					
8	Corporation\Business					
9	Current Parent	49	49			49
10	Development Staff	43.5	55			48.42857143
11	Employee	37.33333333	56			42
12	Friend	43.69230769	47.14285714			44.9
13	Grandparent		63			63
14	Major Donor	44				44
15	Major Donor Prospect	7				7
16	Matching Gift Company					
17	Member	34.75	32.5			33.625
18	Online Donor					
19	Parent					
20	Parent Corporation					
21	Patient	62				62
22	Prospective Donor					
23	Staff Doctor	45				45
24	Student	19	17			17.66666667
25	Subsidiary Corporation		38			38
26	Supporter	45.2	41.9			43.55
27	Trustee	39	49.6			45.625
28	Volunteer	45.6	53			49.7826087
29	Volunteer Site					
30	(blank)	29				29
31	Grand Total	41.7037037	44.43835616			43

Postal Discount Exports

If you have the optional module *Postal Discounts*, you can create an export of records using country specific mail sort options. Records are sorted based on the "Presort ID" field generated when the addresses are processed.

Because running a *Postal Discount* export requires you to specify information such as the types of mailing reports you want to print, you cannot include *Postal Discount* exports as part of a scheduled data mart refresh. The scheduled refresh would stop at the point where you are required to specify information.

When you select address fields to map for address processing with *Postal Discounts*, not all fields are required. In a Postal Discount export, data is shifted to the left to fill in any blank cells. For example:

Name	Addr Line 1	Addr Line 2	City	State	Zip Code
Addison	742 John St.	Apt. 1	Charleston	SC	29492
Adler	104 Dockwell Rd.		Charleston	SC	29492

Becomes:

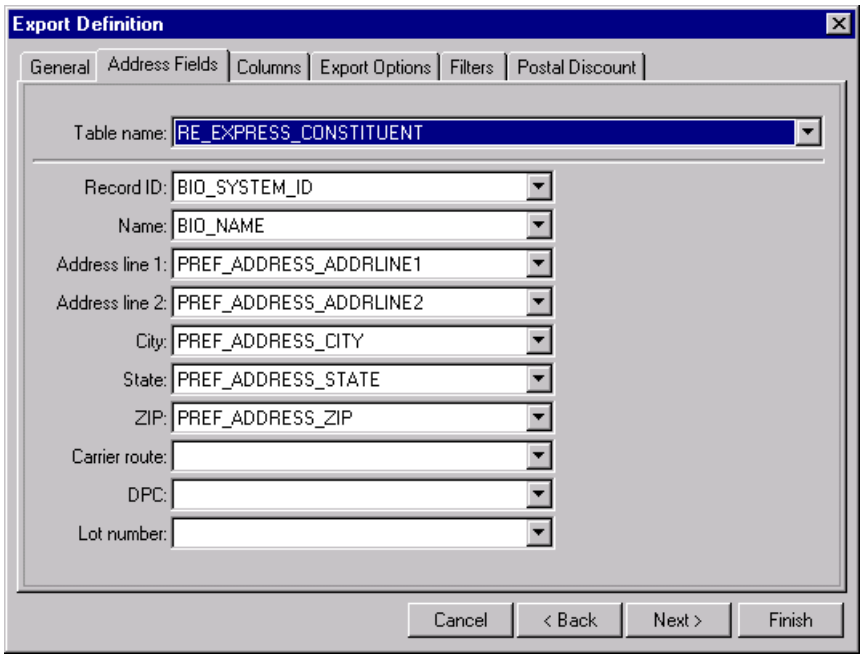
F_1	F_2	F_3	F_4	F_5	F_6
Addison	742 John St.	Apt. 1	Charleston	SC	29492
Adler	104 Dockwell Rd.	Charleston	SC	29492	

In addition to the standard export property tabs, a Postal Discount export includes two additional tabs.

For information about completing the tabs on a standard export definition, see "Creating an export definition" on page 89.

➢ Completing the Export Address Fields tab

1. While creating or editing a Postal Discounts export definition, select the Address Fields tab.



2. In the **Table name** field, select the table containing the fields you want to map to those required for address processing with *Postal Discounts*.
3. Specify the field from the selected table that you want to map in each of the address field dropdowns. Fields that are not required have a blank entry you can select in the dropdown.

   The list of fields is based on the installed country information from the computer on which ***The Information Edge*** is installed. Once the export is defined, the program uses the country used to create the export, so changing the computer's country setting does not affect existing exports.
4. If you are creating a new Postal Discount export definition, click **Next** to access the Columns tab. For more information about this tab, see "Completing the Export Columns tab" on page 91.

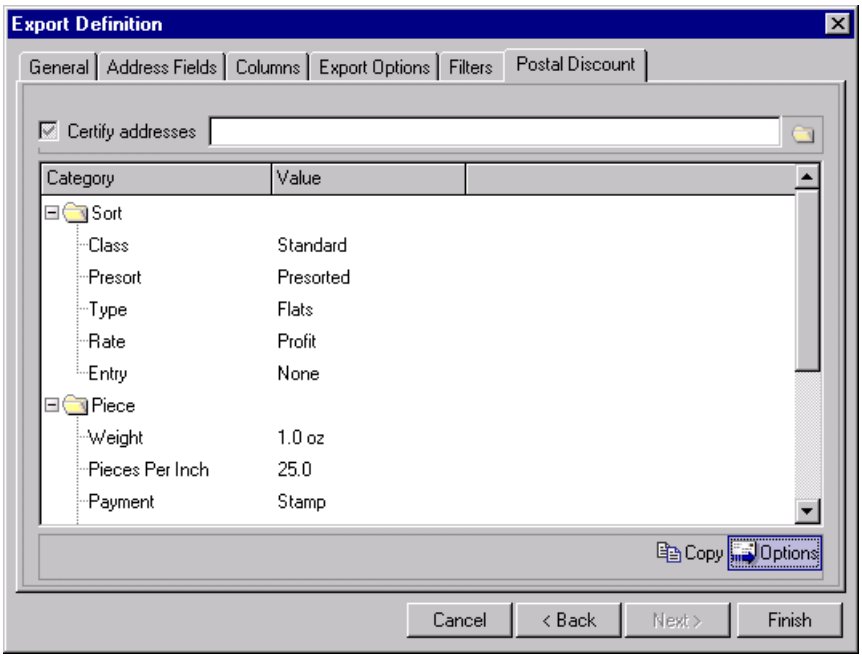
   If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs.

Because the table is selected here, the **Table Name** field is not available on the Columns tab as it is in other types of exports. Additionally, the **Available Fields** list on the Columns tab includes address processing fields (indicated by brackets surrounding the name). These fields vary depending on the country setting and whether or not the program has been enabled for address certification (CASS). Fields are exported in the selected order.

Postal Discount exports also contain one other unique tab, the Postal tab. For more information, see the next procedure.

➢ Completing the Export Postal Discount tab

1. While creating or editing a Postal Discounts export definition, select the Postal Discount tab.



2. If you want to enable address certification, mark the **Certify addresses** checkbox. You must then enter the path to an address certification file. The filename is based on your country.
   - ADDRESS.CAS for the United States
   - AUADDR.PAF for Australia
   - DATAFILE.DAT for Canada
3. To specify settings for Postal Discounts, click **Options**. The Postal Discounts Wizard appears. For more information about these settings, click **Help** on any of the Postal Discounts Wizard screens.
4. To copy presort settings and a certification file path from an existing export (in any data mart), click **Copy**.
5. If you are creating a new Postal Discount export definition, click **Finish.**

   If you are editing the properties of an existing export, click **OK** to save your changes and exit the properties tabs.

Smart Fields

Smart fields are fields you create to increase your flexibility when working with ***Information Edge*** data. Many smart field types are included in ***The Information Edge***. You can use these types to create smart fields for specific tables in your data marts. Your smart fields are then populated with your data and can be incorporated into OLAP cube interactive reports, *WriteBacks*, and, if you have the *Marketing Segmentation* optional module, segmentations.

Analysts will find smart fields especially beneficial because they can be used to determine ratios and other metrics such as Median, Mode, and Average. Smart fields enable you to create additional calculated/derived fields to use in ***The Information Edge***. Once you create a smart field, it is automatically repopulated and recalculated from source data each time you refresh a data mart.

Smart fields can be used as building blocks. You can create smart fields, then use those smart fields to create other smart fields. For example, you can create a smart field for donors that gave at least one cash gift of $100 or more in the last twelve months. You can then use this smart field to create another smart field that shows donors that gave at least one cash gift of $100 or more in the last twelve months and who also live within a specified distance from the location of an event. You can then target these donors with a specific appeal for the event.

As another example, you can create a smart field using the **Blackbaud RFM** type that applies a score to your donors based on the recency, frequency, and monetary value of gifts. You can then create a **Decile** type smart field based on the RFM smart field that divides records into ten groups in ascending order from lowest score to highest. If you have the *Marketing Segmentation* optional module, you may then want to use this field in a segmentation to target each group with a specific type of mailing. For more information about segmentation, see “Marketing Segmentation” on page 171.

Additionally, you can create smart fields that evaluate specified conditions to determine a field entry. You can establish these conditions using an Expression Wizard.

Smart fields can form the basis for *WriteBacks* to ***The Raiser’s Edge*** and ***Financial Edge***. For more information about *WriteBack*, see “WriteBacks” on page 118.

Creating Smart Fields

You can base new smart fields on a wide variety of types included in ***The Information Edge***. The criteria that determines which records are included in a smart field varies according to the type of smart field being created.

➢ Adding a smart field

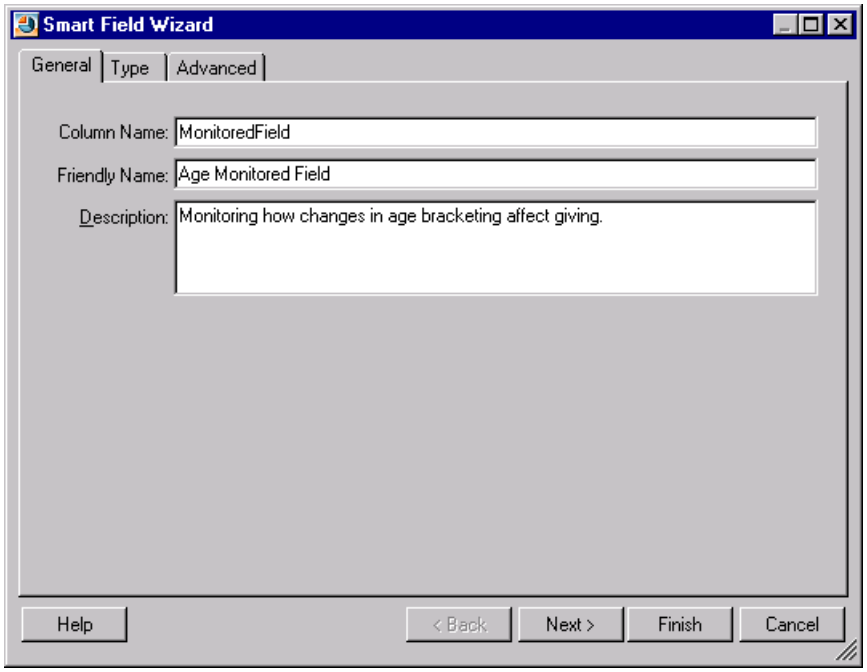
1. On the tree view, under the data mart for which you want to create a smart field, right-click **Smart Fields**. Select **New Smart Field**. The Smart Field Wizard appears opens to the General tab.
2. On the General tab, specify basic information such as the "friendly name" and description of the smart field. For more information, see "Completing the smart field General tab" on page 102.
3. On the Type tab select the type of smart field you want to create. You can select from all types or categories of types. For more information, see "Completing the smart field Type tab" on page 103.
4. On the Tables tab you must select the table in which you want to store the values for the smart field you are creating. For some types of smart fields, you must also select the table from which the values will come. For more information, see "Completing the smart field Tables tab" on page 104.
5. On the Criteria tab, you must specify settings to determine which records will be included in your smart field. For more information, see "Completing the smart field Criteria tab" on page 105.
6. On the Filter tab, you can use SQL statements to filter the records included in your smart field. For more information, see "Completing the smart field Filter tab" on page 106.
7. On the Advanced tab, you can specify processing options such as whether you want to drop and rebuild indexes, clear existing values before refreshing to ensure only the most current values are processed, and more.

   For the most part, the default settings will offer the most efficient processing for your smart fields. Unless you want to change these properties to achieve a specific goal for a smart field, we recommend you leave the default settings in place. For more information, see "Completing the smart field Advanced tab" on page 107.
8. Click **Finish** to save the smart field. A message appears asking whether you want to process the smart field now. If you want to process the field at this time, click **Yes**. Depending on the number of records to process, this can take some time. If you do not want to process the field now, you can click **No** and process it later.

When creating a smart field for a data mart containing numerous records, you may want to test the smart field on sample data or a subset of records before processing it with the entire database. This enables you to see how the smart field aggregates data, how long it takes to process, and to determine the processing time implications for a large database.

➢ Completing the smart field General tab

1. When creating or editing a smart field, select the General tab.



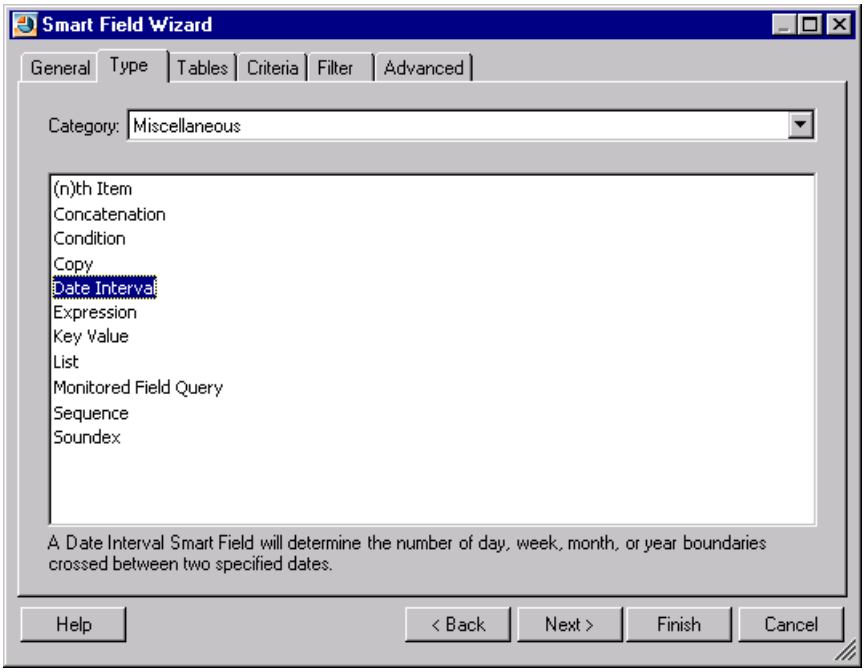
2. Enter a **Column Name**. This will be the actual name of the field created in the database. It must begin with a letter and can contain only letters, numbers, and underscores.
3. You can optionally enter a **Friendly Name** that may be easier to recognize on reports because, unlike the Column Name, you can use spaces and other punctuation in a friendly name.

   You can also optionally enter a **Description**. For example, you can include the function of the field to make it easier to identify on the main Smart Fields page.
4. If you are creating a new smart field, click **Next** to access the Type tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing smart field, click **OK** to save your changes and exit the Smart Field Wizard.

➢ Completing the smart field Type tab

1. When creating or editing a smart field, select the Type tab.



2. You can view all smart fields or select a specific **Category**. Select a type of smart field based on the calculation you want to perform. For example, you may want to select "Average" to create a smart field that includes average gift amounts for donors.

   When you select a smart field type, additional tabs appear on the wizard and a short description of what that type of smart field does appears at the bottom of the screen.

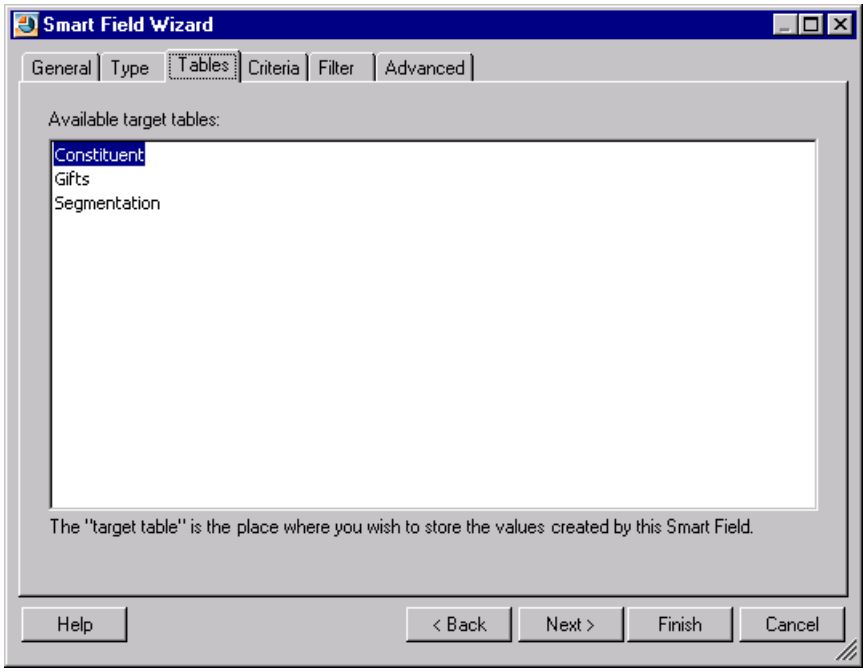
   For more information about the different types of smart fields, see "Smart Field Details" on page 265.

3. If you are creating a new smart field, click **Next** to access the Tables tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing smart field, click **OK** to save your changes and exit the Smart Field Wizard.

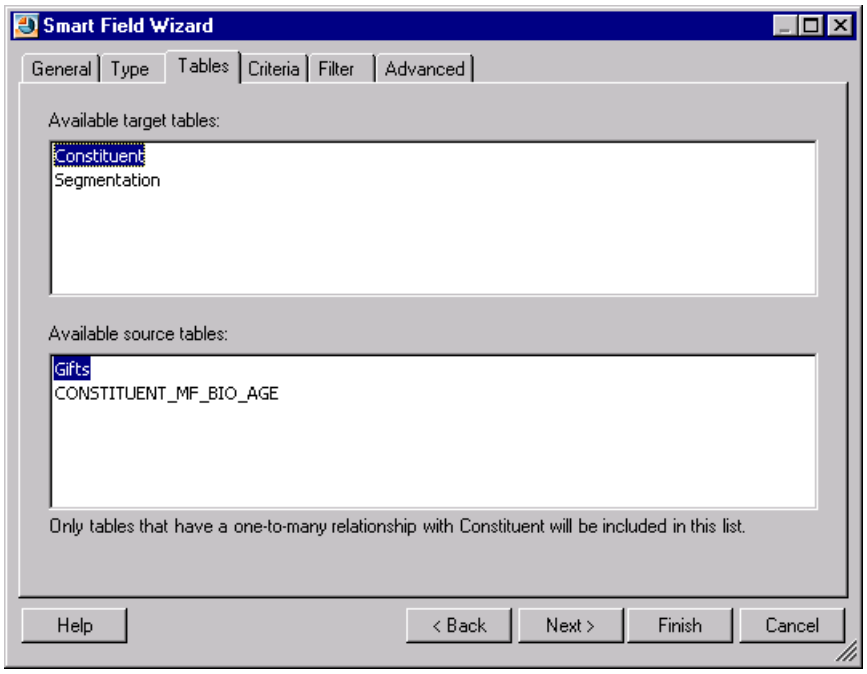
➢ Completing the smart field Tables tab

1. When creating or editing a smart field, select the Tables tab.



2. For all smart fields, you must select a table from the **Available target tables** box. This is the table in which you want to store the values for the smart field you are creating.

   For some smart field types, you must also select a Source Table.



3. From the **Available source tables** box, select the table from which you want to use values that will be processed by the smart field you are creating.

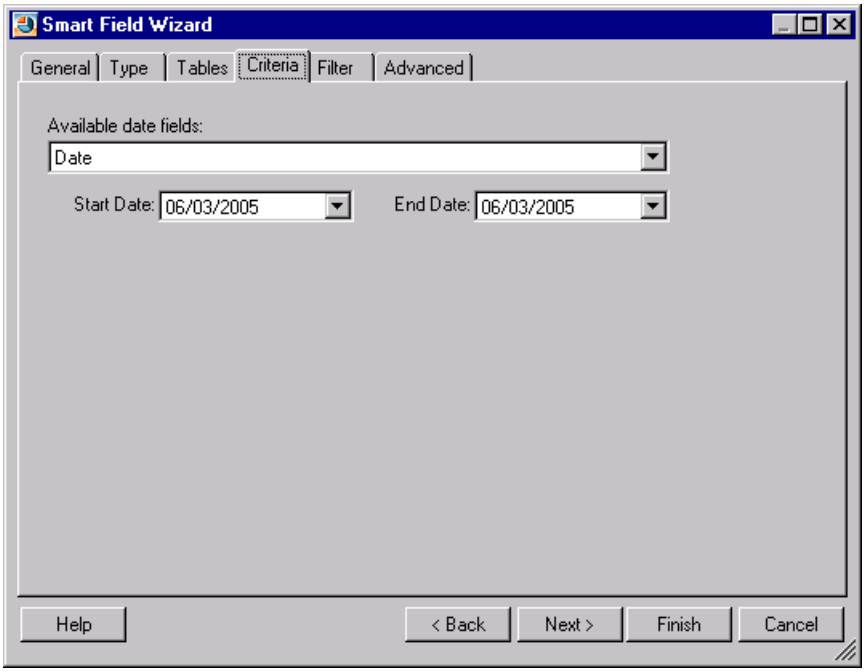
   Only tables with a one-to-many relationship with the selected target table appear in the **Available source tables** box. This means a record in the source table can have many matching records in the target table, but records in the target table have only one matching record in the source table. For example, a constituent can have many gift records, but a gift record corresponds to only one constituent record.

4. If you are creating a new smart field, click **Next** to access the Criteria tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing smart field, click **OK** to save your changes and exit the Smart Field Wizard.

➢ Completing the smart field Criteria tab

1. When creating or editing a smart field, select the Criteria tab.



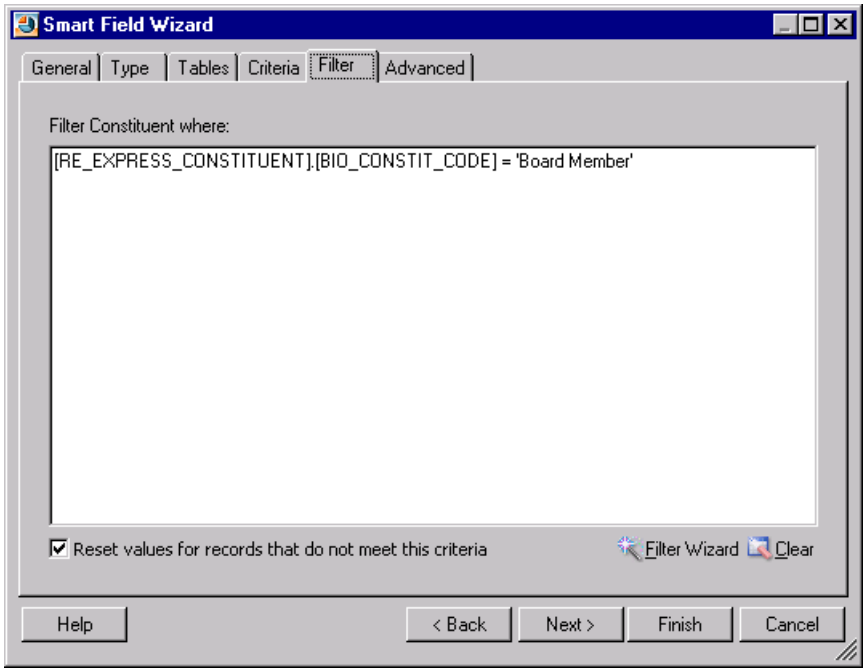
2. The available options on the criteria tab differ depending on the type of smart field you are creating or editing. For more information about the criteria for each type of smart field, see “Smart Field Details” on page 265.

3. If you are creating a new smart field, click **Next** to access the Filter tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing smart field, click **OK** to save your changes and exit the Smart Field Wizard.

➢ Completing the smart field Filter tab

1. When creating or editing a smart field, select the Filter tab.



2. You can use SQL statements to filter the values in your smart field.You can enter a statement directly into the box or click **Filter Wizard** to access a wizard that can help you create a statement.

   Only those records indicated in the SQL statement are processed for the smart field. Other records are filtered and their value is usually NULL or 0 depending on the type of smart field you are creating. For example, records filtered out of a smart field that computes average gift amount have a value of 0, while records filtered out of a first gift date field are NULL.

   When a smart field includes filters, they are applied before the smart field criteria during data mart processing. Then the criteria of the smart field is applied to the remaining records. Those records appear with the values specified or calculated by the criteria for the smart field.

3. The **Reset values for records that do not meet this criteria** checkbox is available for certain types of smart fields. If you mark this checkbox, records that do not meet the criteria when the smart field is first processed are reexamined each time the field is subsequently processed to determine if they now do meet the criteria and the value is reset accordingly.

   If the checkbox is unmarked, records that did not previously meet the criteria are ignored during subsequent processing. Existing values remain the same on these records, even if they now do meet the criteria.

If the type of smart field you are creating required you to enter both a target and source table on the Tables tab, a separate **Filter** box is available for each on the Filter tab.

For example, you may have a smart field based on total giving amount. that you want to process only for constituents age 30 or over. When you create a filter to do that and unmark the **Reset values for records that do not meet this criteria** checkbox, if a constituent turns 30 between the time you first process the smart field and the next time you process it, that constituent would still have the original value because the record is already flagged as not meeting the criteria and it is not processed.

If you mark the **Reset values for records that do not meet this criteria** checkbox, all records are processed and values are reset for any constituents who were not previously 30, but who are now.

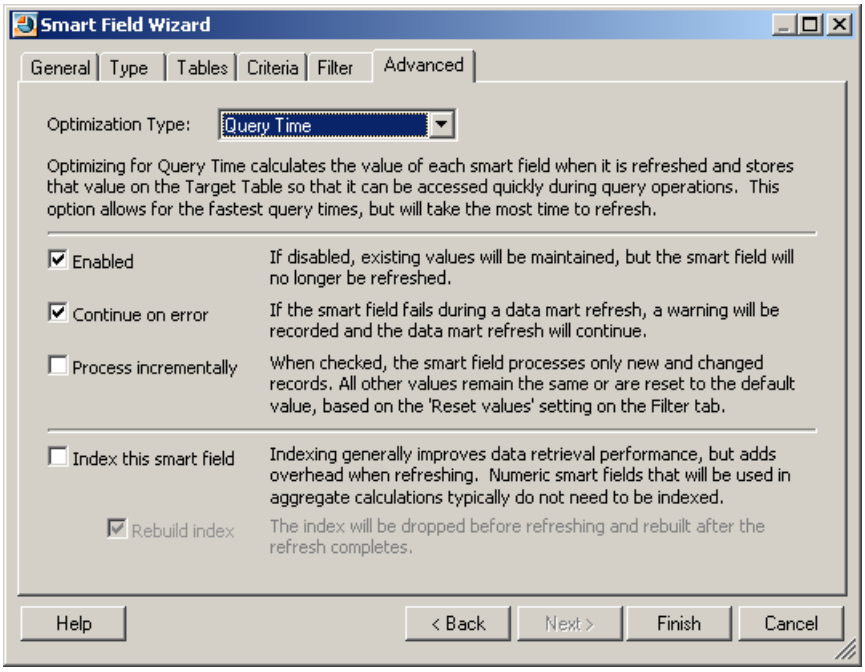
In almost all cases you will probably want to leave the checkbox marked. It is generally only useful if you want to reduce processing time by maintaining archival information for certain records in specific smart fields.

4. If you are creating a new smart field, click **Next** to access the Advanced tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing smart field, click **OK** to save your changes and exit the Smart Field Wizard.

➢ Completing the smart field Advanced tab

1. When creating or editing a smart field, select the Advanced tab.


Smart Field Wizard
General
Type
Tables
Criteria
Filter
Advanced
Optimization Type:
Query Time
Optimizing for Query Time calculates the value of each smart field when it is refreshed and stores that value on the Target Table so that it can be accessed quickly during query operations. This option allows for the fastest query times, but will take the most time to refresh.
Enabled
If disabled, existing values will be maintained, but the smart field will no longer be refreshed.
Continue on error
If the smart field fails during a data mart refresh, a warning will be recorded and the data mart refresh will continue.
Process incrementally
When checked, the smart field processes only new and changed records. All other values remain the same or are reset to the default value, based on the 'Reset values' setting on the Filter tab.
Index this smart field
Indexing generally improves data retrieval performance, but adds overhead when refreshing. Numeric smart fields that will be used in aggregate calculations typically do not need to be indexed.
Rebuild index
The index will be dropped before refreshing and rebuilt after the refresh completes.
Help
< Back
Next >
Finish
Cancel

We strongly recommend you leave the default processing settings in place unless you are changing them for a specific reason under unique circumstances.

In general, by default the program attempts to optimize for Balanced time. However, if you perform the same task over and over again using the same field(s), you may want to materialize those values onto the Target Table (which is what Query Time optimization does) to help improve query performance. However, this adds time to data mart refreshes.

2. The **Optimization Type** field default entry is based on the type of smart field you are creating. In almost all cases you should leave the default unless you are attempting to achieve a specific goal with the field's processing. Refresh Time and Balance Time optimization is not available for all smart field types. On these smart fields, Query Time is locked as the optimization type.

   - **Query Time** - Optimizing for Query Time maximizes performance when the smart field is used during query operations such as report generation. The value of a Query Time optimized smart field is calculated when the smart field is refreshed, and the value is stored on the Target Table. This enables the value to be accessed quickly during queries, but it takes longer to refresh than other optimization types.

     Any smart field can have an optimization type of Query Time.

   - **Refresh Time** - The value of a smart field optimized for Refresh Time is calculated only when it is accessed in a SQL request. Because of this, the smart field does not need to be refreshed so it adds no time to data mart processing; however, it takes the longest time to query.

     Refresh Time optimization is available only on the following types of smart fields.

Average	Lybunt
Bin	Maximum
Concatenation	Medium
Condition	Minimum
Count	Mode
Days Since	Standard Deviation
Expression	Sum
First Gift	Sybunt
Latest Gift	

   - **Balanced Time** - Balanced Time optimization results in a middle ground between optimizing for Query Time or Refresh Time. When a Balanced Time optimized smart field is refreshed, the value is calculated and stored in its own table. When the value is requested during a query operation, it is retrieved from that table.

     Balanced Time is available on the same smart field types that allow Refresh Time optimization.

   The type of optimization you select depends on your goal for a particular smart field. In general, by default the program optimizes for Balanced Time. Changing to Refresh Time can help if, for example, you need to refresh a data mart within a limited time frame, and are willing to gain the refresh time at the expense of increasing query time. However, if your window for data mart refreshes leaves you plenty of time, the Refresh Time option may not benefit you.

   For a smart field you use a great deal, you will probably want to optimize for Query Time. But if you have a field you use very rarely, Refresh Time optimization may be better suited because refreshing the smart field every time you process the data mart may be unnecessary.

3. The checkboxes that are available on the rest of the tab are dependant upon the type of optimization selected for the smart field.

   If you unmark the **Enabled** checkbox, existing values are kept during subsequent incremental refreshes, but no new values are added. After the column is dropped (which will occur during the next full refresh), a NULL value appears for each record.

   You may want to unmark this checkbox if, for example, you no longer want to process a smart field, but do not want to delete it so you can save the calculations in it for later use.

4. Marking the **Continue on error** checkbox enables a data mart to continue processing even if the smart field fails for some reason. In such a case, a warning is written to the processing history, but the data mart continues to process. However, any other data mart elements that are dependent on the smart field (such as other smart fields, exports, and reports) will likely be invalid or out of date.

   If you receive a warning, you must investigate the cause of the smart field failure (typically a badly formed SQL statement, or bad or unexpected data from the source system) and then manually refresh the smart field and all of its dependencies.

5. Mark the **Process incrementally** checkbox to decrease processing time by specifying that the smart field be processed only for new or changed records.

   This checkbox is available only on the following types of smart fields.

   - Bin
   - Condition
   - Expression
   - Aggregate smart fields, including: Average, Count, Min, Max, Standard Deviation, and Sum.

6. When you mark the **Index this smart field** checkbox, an index is created when the smart field is processed. While indexes usually increase speed and performance for reporting and data retrieval, creating indexes results in a data mart taking longer to process.

   Without an index, all the records in a table have to be read before the records can be retrieved. With an index on a referenced field, only the index has to be read before data retrieval can begin. If you find this increased efficiency in reporting preferable to the increase in processing time, mark the checkbox.

   An exception is numeric fields that are used in aggregate calculations. These fields typically do not need to be indexed. Indexing will generally increase performance in most other fields.

7. When you mark the **Rebuild index** checkbox, indexes are dropped and then rebuilt during a refresh. With the indexes dropped, data updates are faster, but all the indexes must be rebuilt. If the checkbox is unmarked, indexes are not dropped so updates are slower, but you save the time needed to rebuild the indexes.

We recommend you leave this checkbox marked unless your refreshes typically include a relatively small number of records.

8. If you are creating a new smart field, click **Finish** save your smart field. A message asks if you want to process the smart field now or later. If you want to process the field at this time, click **Yes**. Depending on the number of records to process, this can take some time. If you do not want to process the field now, you can click **No** and process it later.

   If you are editing the properties of an existing smart field, click **OK** to save your changes and exit the Smart Field Wizard.

Smart Field Dependencies

Like other ***Information Edge*** objects, you can view a smart field's dependencies: items that would be affected if you edited or removed a smart field. Because smart fields can be used as building blocks, editing the properties of one smart field impacts any other smart field that uses the field as part of its own properties. For example, if you created an "Average" type smart field and then used that field to calculate other smart fields, those fields are affected if you edit the "Average" field. Before editing a smart field's properties, you should view all the fields that are dependent on the selected field. For more information, see "Dependencies" on page 21.

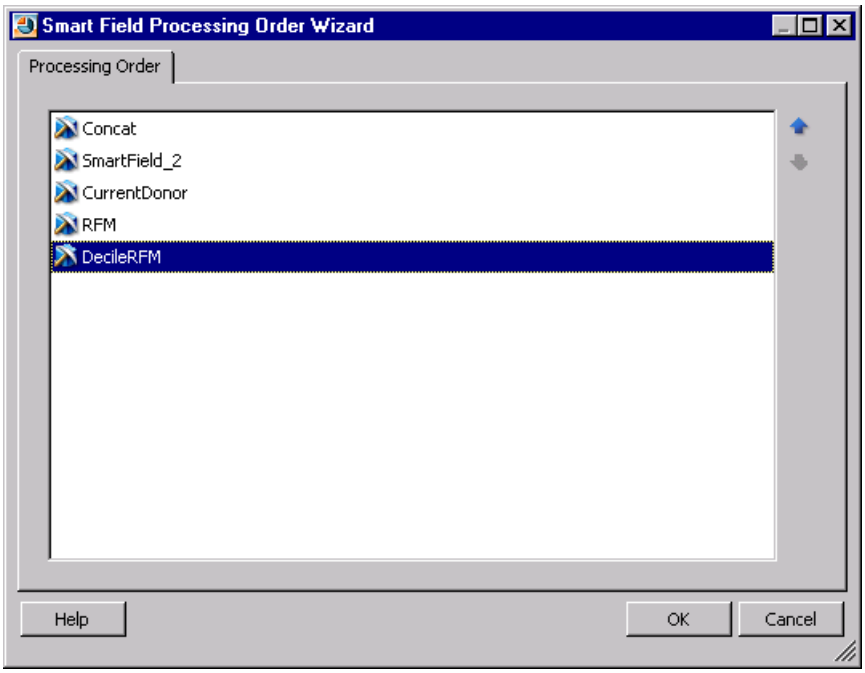
Smart Field Processing Order

You can specify the order in which your smart fields process. In some instances you may want one smart field to filter your records, then apply calculations for another smart field to that subset of your records.

If you do not specify an order, smart fields are processed in the order in which they are created, with the one created first processed first, and the most recently created processed last.

➢ **Setting the order in which smart fields are processed**

1. Select **Smart Fields** in the tree view and click **Processing Order** in the action bar. The Smart Field Processing Order Wizard screen appears.



2. To change the order, highlight a smart field and drag it up or down to the position you want. You can also use the arrow buttons on the right to move it up or down.
3. When you finish setting the processing order, click **OK** to return to the Smart Fields page.

Selections

Selections enable you to build groups of constituent records using tools similar to queries in other Blackbaud products. Using selections in *Marketing Segmentation* can reduce the need to create smart fields "on the fly" and simplify the process of creating segmentations.

Creating Selections

When you create selections, you specify the criteria ***The Information Edge*** will use to group records in segmentation segments. Then you can use these selections to limit the scope of a segmentation to a specific group of records.

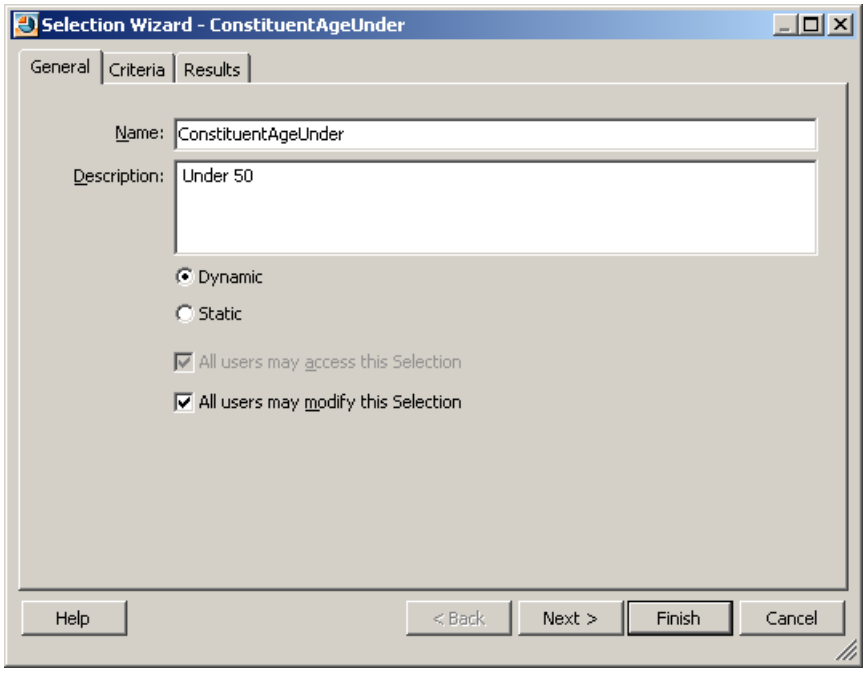
➢ **Adding a Selection**

1. On the tree view, under the data mart for which you want to create a selection, right-click **Selections**, **New**. The Selections Wizard appears opens to the General tab.

2. On the General tab, specify basic information such as the name and description of the selection. For more information, see “Completing the Selection General tab” on page 112.
3. On the Criteria tab, specify which records will be included in your selection. For more information, see “Completing the Selection Criteria tab” on page 113.
4. On the Results tab, you can view the data included in your selection by columns. For more information, see “Completing the Selection Results tab” on page 117.
5. Click **Finish** to save the selection. A message appears asking whether you want to process the selection now. If you want to process it at this time, click **Yes**. Depending on the number of records to process, this can take some time. If you do not want to process the selection now, you can click **No** and process it later.

➢ Completing the Selection General tab

1. While creating or editing a selection, select the General tab.



2. Enter a **Name** and **Description** for the selection. This information appears on the main Selections page of *Configuration*.
3. When you select the **Dynamic** option, the selection is automatically refreshed each time it is used. Any new records meeting the criteria you specify are included each time the selection is run.

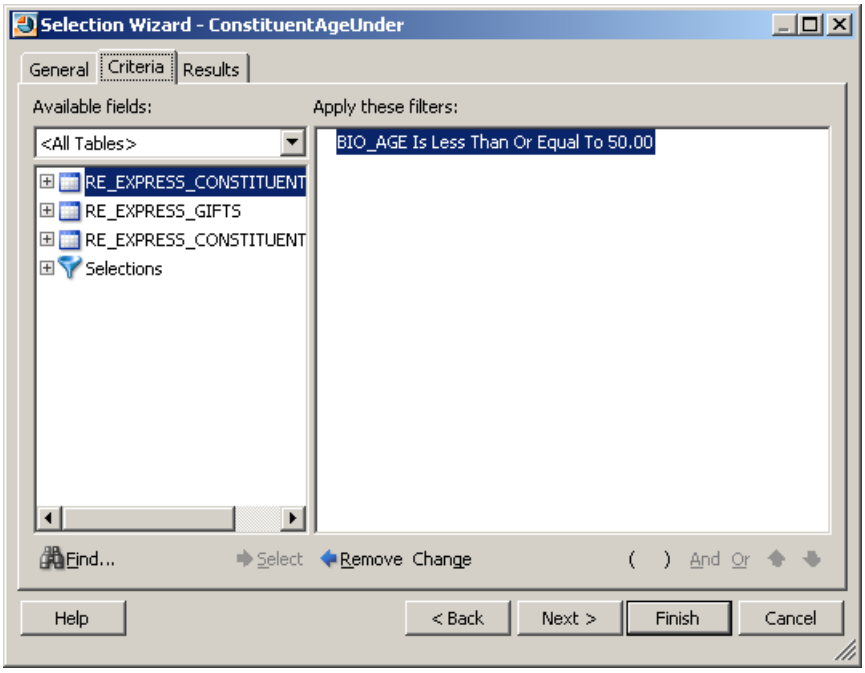
   When you select the **Static** option, only the records included when the selection is originally created are included in it. Any records added or edited after the selection is initially saved are not included even if they meet the criteria.

4. The **All users may access this Selection** checkbox is locked as marked so the selection can be used by other users of the program. If you want to unmark it, you must first unmark the **Other users may modify this Selection** checkbox to indicate that other users cannot edit the properties of this selection.
5. If you are creating a new selection, click **Next** to access the Criteria tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing selection, click **Finish** to save your changes and exit the Selection Wizard.

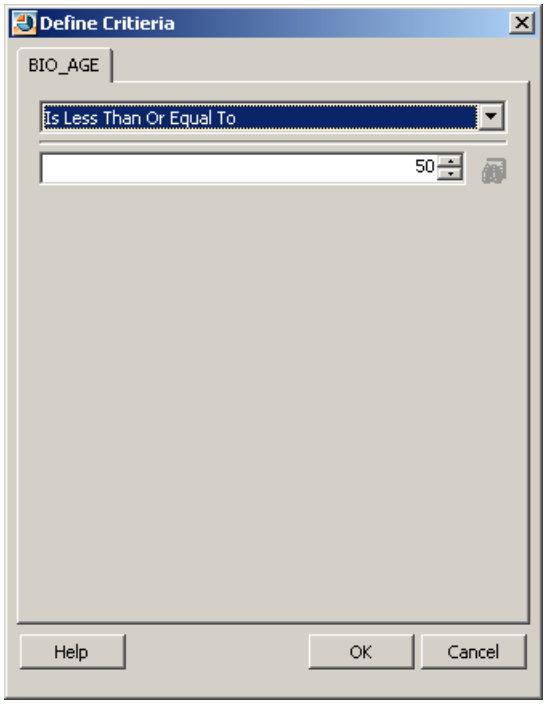
➢ Completing the Selection Criteria tab

1. While creating or editing a selection, select the Criteria tab.



   On the Criteria tab, you can select the criteria fields and enter criteria operators to determine which records to include in the selection.

2. When you drag and drop a field from the **Available fields** box to the **Apply these filters** box, the Define Criteria screen appears.



3. Specify a condition and corresponding value to determine the records you want to include in your selection.

   You can select from many different conditions to narrow your selections, but not all of them are appropriate for every field. For information about all the available conditions, see “Expression and Selection Wizard Conditions” on page 84.

   You can also search for field values if you do not want to scroll through the dropdown for a field with numerous values. For more information, see “Searching for selection criteria field values” on page 116.

4. Click **OK** to return to the Criteria tab, where your condition now appears in the **Apply these filters** box.

5. The **And**, **Or**, and **Parentheses** combining operators enable you to narrow your selection even further by combining multiple sets of filtering criteria to make one. Combining operators provide a link between selected criteria and define the records included in the selection.

   - **And** - You can use the **And** button between criteria fields to indicate that records must meet both criteria to be selected. For example, if you use the field criteria Last Name “equals” to Smith And Constituency Code “equals” to Board Member, the program locates all constituents whose last name is Smith AND who are board members. The records selected have to meet both criteria to be included in the selection. The default combining operator used in a selection is **And**.

- **Or** - You can use the **Or** button between fields to indicate records can meet either criteria to be selected. For example, if you use the field criteria Last Name “equals” to Smith Or Constituency Code “equals” to Board Member, the program locates all constituents whose last name is Smith OR constituents with a constituency code of board member.
- **Parentheses ( )** - You can use the parentheses buttons to make two pieces of a criteria a whole. If you select the following criteria: State “equals” South Carolina And (Constituency Code “equals” Board Member Or Gift Amount “greater than or equal to” $1,000) the records selected must first have South Carolina as a value in the **State** field, and must have either a constituent code of Board Member or a gift amount of $1000 or more. In this case, records must meet the first criteria and at least one of the criteria within the parentheses.

  For more information about how selection criteria are processed, see the next section.

6. Use the up and down arrows to specify the order in which the operations are processed.
7. If you are creating a new selection, click **Next** to access the Results tab. For more information about this tab, see “Completing the Selection Results tab” on page 117.

   If you are editing the properties of an existing selection, click **Finish** to save your changes and exit the Selection Wizard.

Selection Criteria Processing Order

The order in which you use combining operators when selecting criteria affects the results returned by your statements. When more than one operator is used in a statement, “and” operators are evaluated first. You can change the order of evaluation by using parentheses.

For example, the statement:

```
Gender is equal to Female
or Age is greater than or equal to 50
And Gift Amount is equal to 100
```

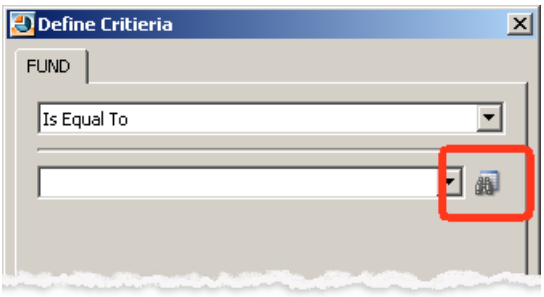
returns different results from:

```
(Gender is equal to Female
or Age is greater than or equal to 50)
And Gift Amount is equal to 100
```

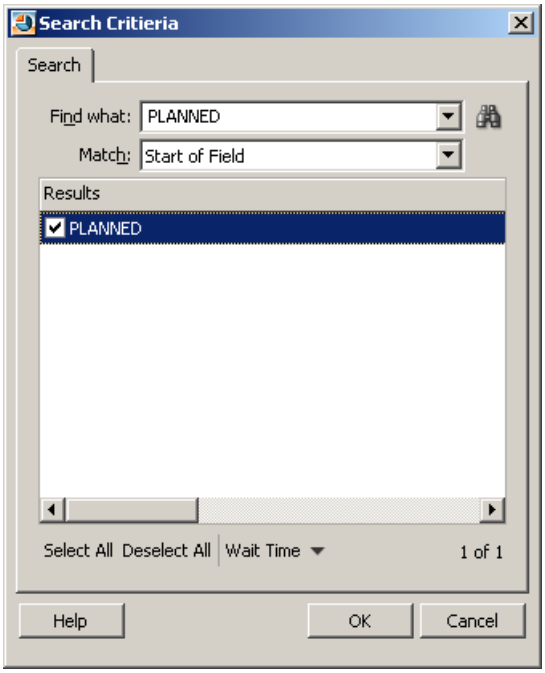
These two statements do not return the same results because by default *SQL Server* processes the “and” operator first. So, in the first statement, “Age is greater than or equal to 50 and GiftAmount is equal to 100” is processed and returns its results, then “or Gender is equal to Female” is processed against only those records returned from the “and” operation. However, due to the parentheses in the second statement, the “or” operator is processed before “and.”

➢ Searching for selection criteria field values

1. From the Selection Define Criteria screen, click the binoculars beside the value field.



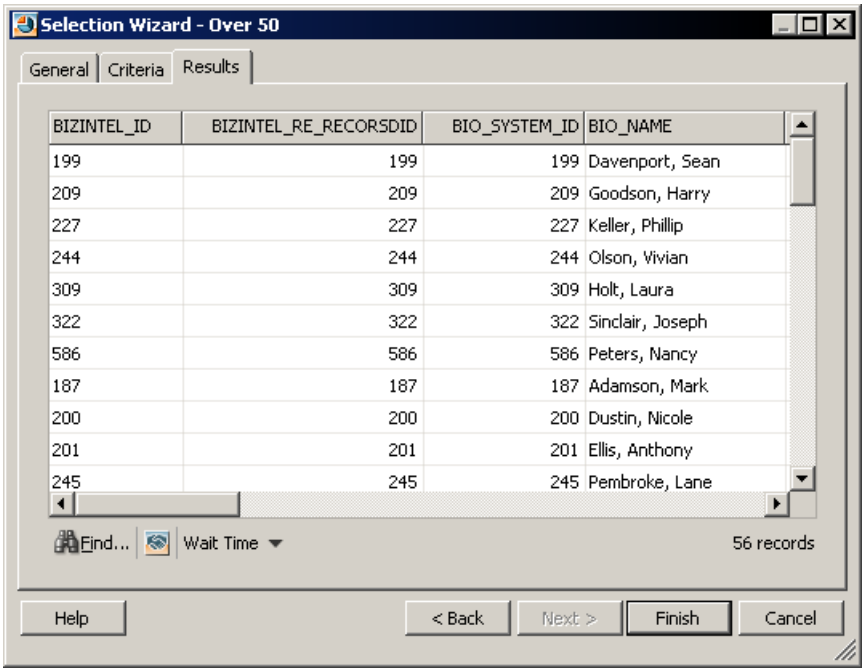
The Search Criteria screen appears.



2. In the **Find what** field, enter a partial or whole name of the field value you want to find. In the **Match** field, specify whether you want to match the start, whole, or any part of the value.
3. Click the binoculars to start the search. Any results matching your criteria appear in the **Results** box.
4. **Wait Time** limits the amount of time a search is conducted. Searches stop after the specified wait time period (even if the search is not complete) and return only those results found before the time out occurred.
5. Select the entry or entries you want to use as criteria for the selection.
6. Click **OK** to return to the selection Criteria tab, where the selected entry or entries now appear.

➢ Completing the Selection Results tab

1. While creating or editing a selection, select the Results tab.



   The Results tab displays the data organized in columns resulting from your Criteria field selections.

2. To locate a specific record in the results, click the binoculars and enter the appropriate information on the Find screen.

   Wait Time limits the amount of time a search is conducted. Searches stop after the specified wait time period (even if the search is not complete).

3. You can select a record in the grid and click the Raiser's Edge "handshake" icon (beside the binoculars) to open that record in ***The Raiser's Edge***.

4. Click **Finish** to save your changes and return to the main query page.

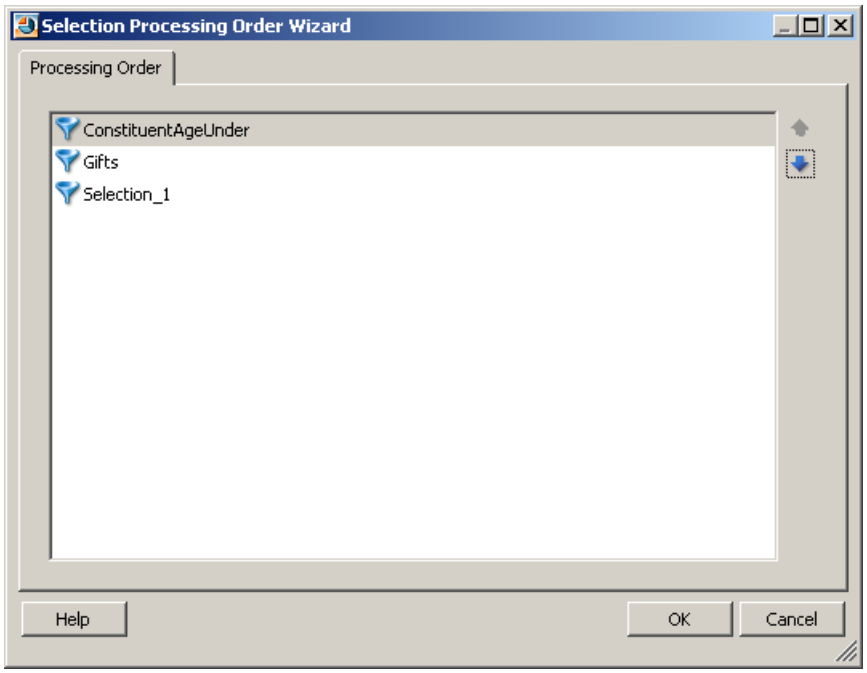
Selection Processing Order

You can specify the order in which your selections process. In some instances you may want one selection to filter your records, then apply another selection to that subset of your records.

If you do not specify an order, selections are processed in the order in which they are created, with the one created first processed first, and the most recently created processed last.

➢ **Setting the order in which selections are processed**

1. Select **Selections** in the tree view and click **Processing Order** in the action bar. The Selection Processing Order Wizard screen appears.



2. To change the order, highlight a selection and drag it up or down to the position you want. You can also use the arrow buttons on the right to move it up or down.
3. When you finish setting the processing order, click **OK** to return to the Selections page.

WriteBacks

You can send information from ***The Information Edge*** back to ***The Raiser's Edge*** by grouping constituents in a static query or by adding an attribute to specified records. For example, you may create a smart field based on the **Blackbaud RFM** type. Using *WriteBack* you can group all donors who had a specified minimum RFM score and create a static query in ***The Raiser's Edge*** that you can use in a mailing. You can also group records based on a SQL expression.

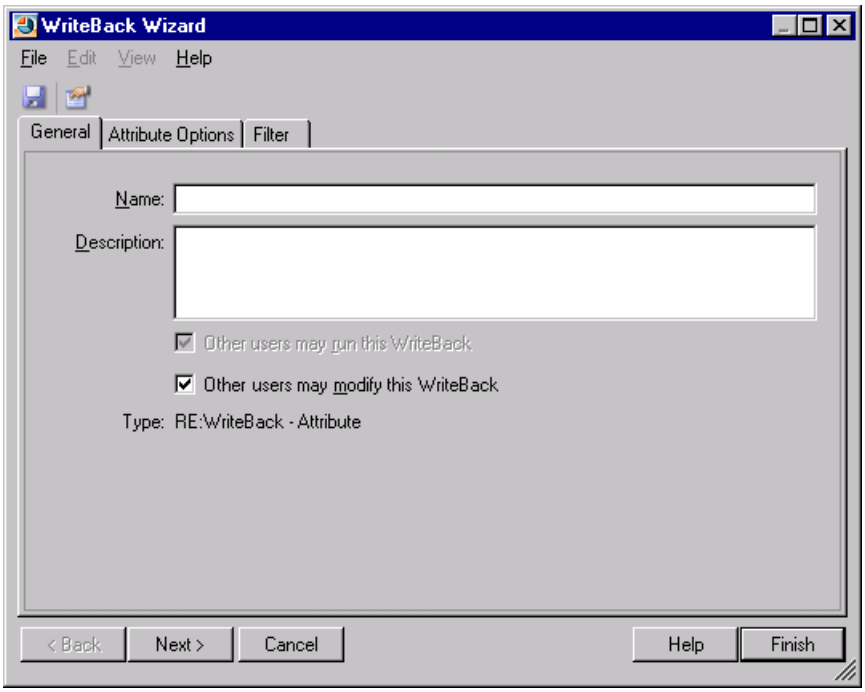
➢ **Adding a new WriteBack**

1. On the *Configuration* tree view, click the plus sign beside the name of the data mart for which you want to create a WriteBack.
2. Right-click on **WriteBack**, and select **New**. Select whether the WriteBack should a **Query** or an **Attribute**. The WriteBack Wizard opens to the General tab.
3. On the General tab, specify basic information such as a name and description of the WriteBack. For more information, see the next procedure.

4. On the Options tab, specify information about the query or attribute you are writing back to ***The Raiser's Edge***. For more information, see "Completing the WriteBack Query Options tab" on page 120 or "Completing the WriteBack Attribute Options tab" on page 121.
5. On the Filter tab, specify which records should be included in the query or be given the attribute. For more information, see "Completing the WriteBack Filter tab" on page 122.

➢ Completing the WriteBack General tab

1. While creating or editing a WriteBack, select the General tab.



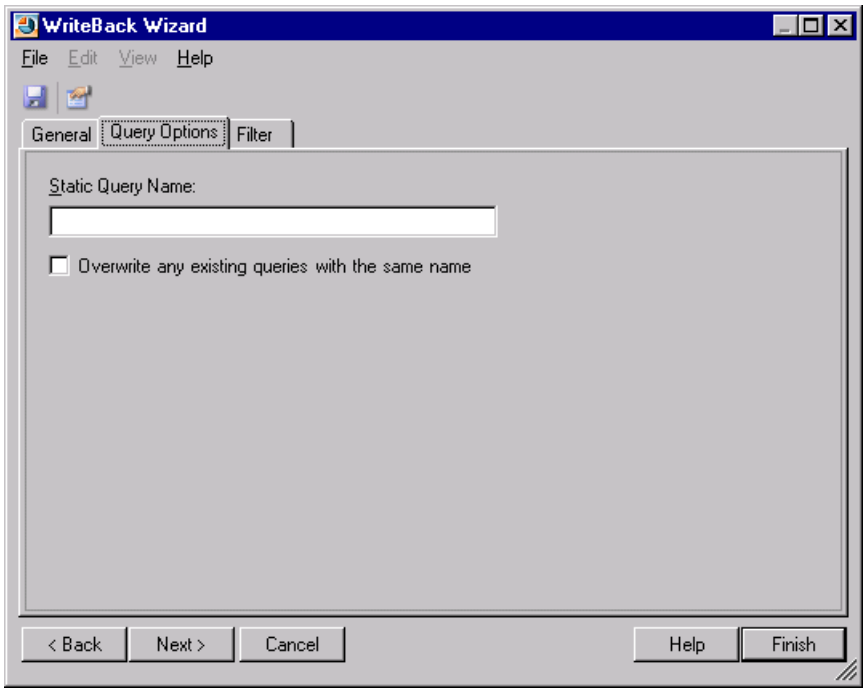
2. Enter a **Name** and **Description** for the WriteBack. This information appears on the main WriteBacks page of *Configuration*.
3. The **Other users may run this WriteBack** checkbox is locked as marked so the WriteBack can be used by other users of the program. Mark the **Other users may modify this WriteBack** checkbox if you want other users to be able to edit the properties of this WriteBack.
4. If you are creating a new Query WriteBack, click **Next** to access the Query Options tab. For more information, see next procedure.

   If you are creating a new Attribute WriteBack, click **Next** to access the Attribute Options tab. For more information about this tab, see "Completing the WriteBack Attribute Options tab" on page 121.

   If you are editing the properties of an existing WriteBack, click **OK** to save your changes and exit the WriteBack Wizard.

➢ Completing the WriteBack Query Options tab

1. While creating or editing a query WriteBack, select the Query Options tab.



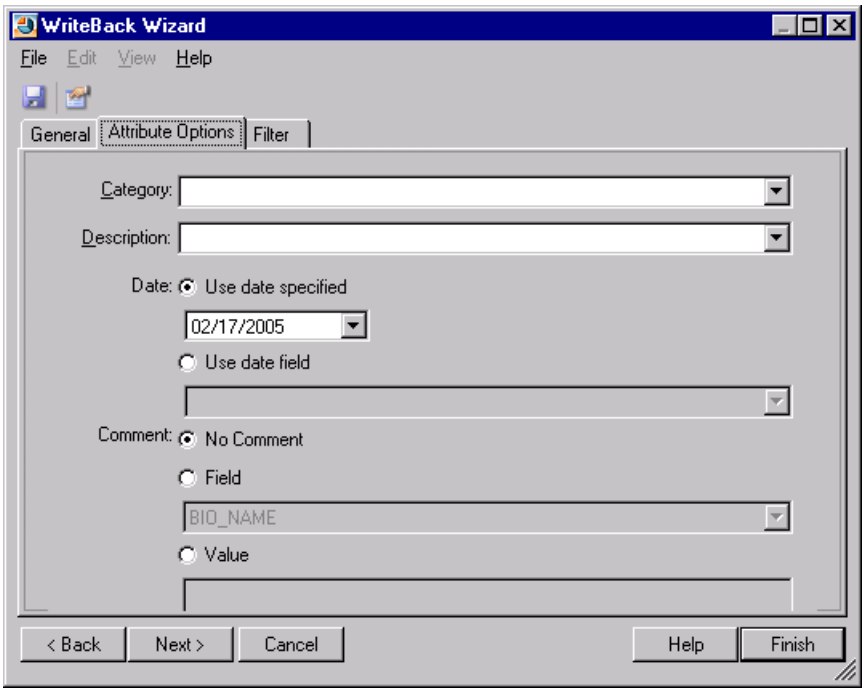
2. Enter a **Static Query Name**. The query appears with this name in ***Raiser's Edge*** searches and on the Query page.
3. Mark the **Overwrite any existing queries with the same name** checkbox if you want this query to replace one with the same name in ***The Raiser's Edge***.
4. If you are creating a WriteBack from a Pivot Table Drill Through, click **OK** to create your query.

   If you are creating a new WriteBack from the *Configuration* tree view, click **Next** to access the Filter tab. For more information, see the next procedure.

   If you are editing the properties of an existing WriteBack, click **OK** to save your changes and exit the WriteBack Wizard.

➢ Completing the WriteBack Attribute Options tab

1. While creating or editing an attribute WriteBack, select the Attribute Options tab.



2. Select a **Category** for the attribute. All those you have defined in ***The Raiser's Edge*** are available from the dropdown here.

   To create a new attribute category that does not yet exist in ***The Raiser's Edge***:

   a. Click the icon to the right of the **Category** field. The New RE Category screen appears.

   b. In the **Description** field, enter the category for the new attribute.

   c. Specify the **Data Type** for the new attribute category.

   d. If you want the attribute to come from an existing table in ***The Raiser's Edge***, select "Table" in the **Data Type** field and the **Table Name** field becomes enabled. When you select a table from the dropdown, the entries from that table become available in the **Description** field when you return to the Attribute Options tab.

   e. Click **OK** to return to the Attribute Options tab.

3. In the **Description** field select the field whose value will appear as the description of the attribute in ***The Raiser's Edge***.

4. Specify a **Date** to appear on the attribute. You can either enter the date here or specify a date from another field be used.

5. Specify whether or not a **Comment** is included with the attribute. You can specify a value from a field be used, or enter one in the text box.

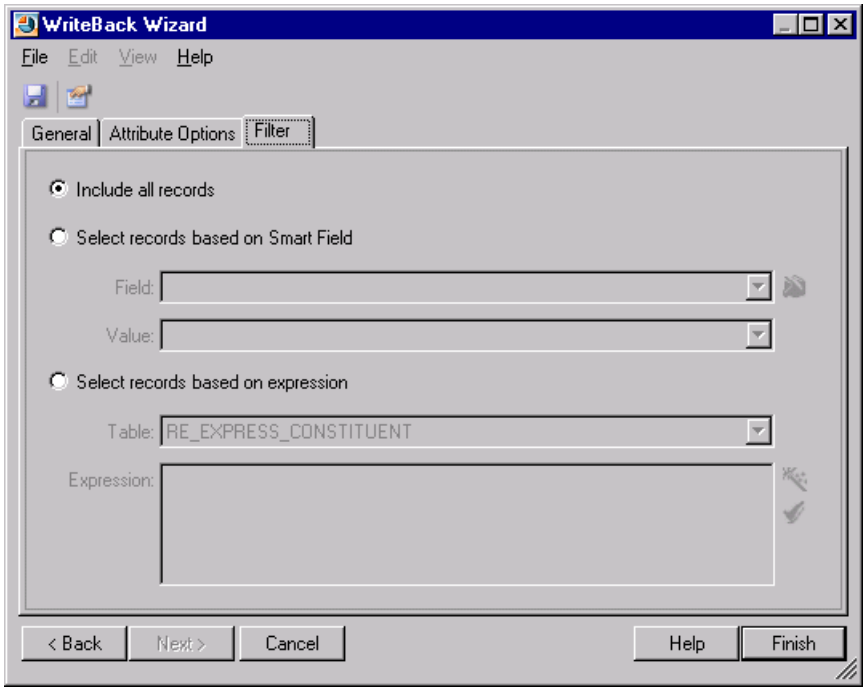
6. If you are creating a new WriteBack, click **Next** to access the Filter tab. For more information, see the next procedure.

If you write back attributes to a category on records that already have an entry in that category, the existing entry will be overwritten by the attribute you specify here.

If you are editing the properties of an existing WriteBack, click **OK** to save your changes and exit the WriteBack Wizard.

➢ Completing the WriteBack Filter tab

1. While creating or editing an attribute WriteBack, select the Filter tab.



2. Mark the **Include all records from** option to select all records from the defined constituent table.

   Mark the **Select records based on Smart Field** option to filter based on a smart field value. The **Field** dropdown contains only those smart fields associated with a table containing a known ***Raiser's Edge*** constituent ID. For example, smart fields from the SEGMENTATION_DATA table do not appear in the dropdown because that table does not include a constituent ID field. Select the **Value** that records must have to be included in the WriteBack.

   Mark the **Select records based on expression** option if you want to use a SQL expression to filter records. The available **Tables** in the dropdown are those containing the known constituent ID. Right-clicking in the **Expression** box enables you to select from a list of fields in the selected table. You can enter text directly in the **Expression** box.

   You can also use the **Expression** wizard to create your SQL expression. To access the wizard, click the button at the top right of the **Expression** box.

   a. On the Select Field screen, select the field for which you want to create an expression. All fields in the selected table (including any other smart fields you have already created) are available.

b. Click **Next**. The Select Condition screen appears. Select a **Condition** and specify the **Values** for that condition. The available values vary depending on the selected condition. For more information about the available conditions, see “Expression and Selection Wizard Conditions” on page 84.

c. Click **Finish**. You return to the Create Raiser’s Edge Static Query screen where your expression appears in the **Expression** box. Only records meeting the criteria of your expression will be included in the WriteBack.

You can click the **Check Syntax button** to ensure your expression is a valid SQL statement.

3. If you are editing the properties of an existing WriteBack, click **OK** to save your changes and exit the WriteBack Wizard.

   If you are creating a new WriteBack, click **Finish**. You are asked if you want to process the WriteBack now. If you click **Yes**, A static query or attribute is created according to the properties you established, and you return to the main WriteBacks page.

Publications

Publications enable you to save Pivot Tables, Charts, and *Crystal Reports* as Web pages which can be viewed on your intranet by other members of your organization. You can publish the files to a shared network location, or if you have *Internet Information Services* (IIS) installed, to a virtual directory.

When the page is stored in a location with access to the instance of *SQL Server* used by ***The Information Edge***, and viewed with *Internet Explorer* version 5.x or higher (with scripting enabled) on a machine with *Office Web Components* installed, the report can be interactive. This means the person viewing the report can manipulate the tables in a Pivot Table or change the views and display in a Chart through the browser. When accessed on a machine without *Office Web Components* installed, with scripting disabled, or with no connection to the database server, the page can be viewed as an image only.

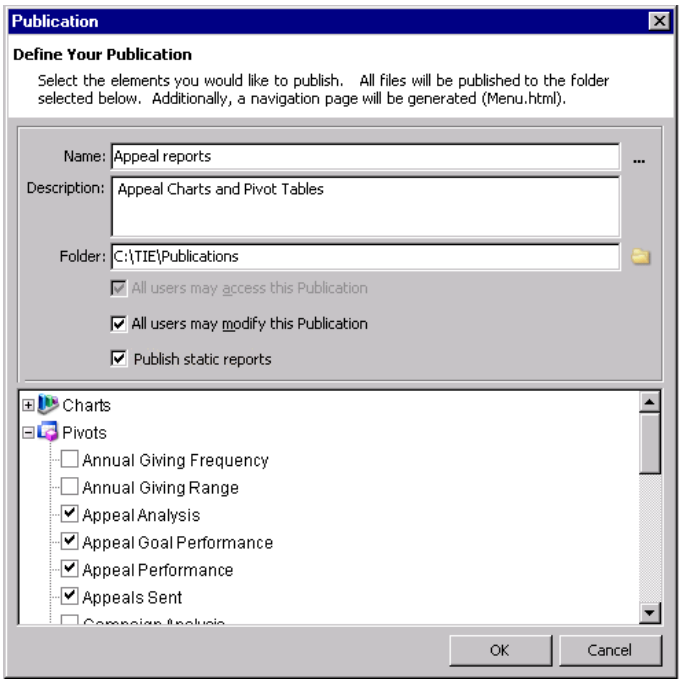
Crystal Reports are viewed as pdf files within a publication.

The publication generates a file called “menu.html,” which serves as a “Home” page or central location with links to all the items you select to appear in the publication.

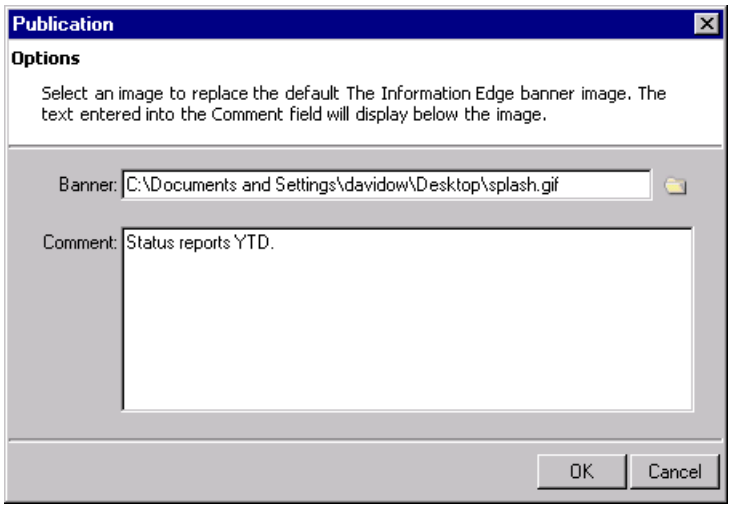
If you have the *Marketing Segmentation* optional module, you can also publish charts for your active segmentations.

➢ Creating a Publication

1. On the *Configuration* tree view, right-click on **Publications** and select **New Publication**. The Define Your Publication screen appears.



2. Enter a **Name** for the publication. This name will appear in the console.
3. Click the ellipsis by the **Name** field. The Options screen appears.


Publication
Options
Select an image to replace the default The Information Edge banner image. The text entered into the Comment field will display below the image.
Banner: C:\Documents and Settings\davidow\Desktop\splash.gif
Comment: Status reports YTD.
OK
Cancel

4. If you do not want to use the default ***Information Edge*** graphic image on your publication, in the **Banner** field, click the folder icon to browse to the graphic you want to use. This graphic will be copied into the destination folder you establish for the publication.
5. In the **Comment** field, enter any text you want to appear under the banner.
6. Click **OK** to return to the Define Your Publication screen.

7. You can optionally enter a **Description** to help you identify this particular publication in ***The Information Edge*** console.
8. Click the icon beside the **Folder** field and browse to the location where you want to store the publication. For example, you may want to place the files in a specific shared folder. You cannot enter text directly into the **Folder** field.
9. The **Other users may access this publication** checkbox is locked as marked so the publication properties can be viewed by other users of the program. If you want to unmark the checkbox, you must first unmark the **Other users may modify this publication** checkbox. When it is marked, other users are able to edit the properties of the publication. Please note that these checkboxes affect access to the properties rather than the actual output of the publication.
10. Publications access ***The Information Edge*** database to produce reports that are dynamic and fully interactive. However, to enable users to view reports on workstations without the Microsoft Office Web Components installed, or with no connection to the database server, you can mark the **Publish static reports** checkbox to create static versions of the selected reports. The static version is actually a .gif image of the report.

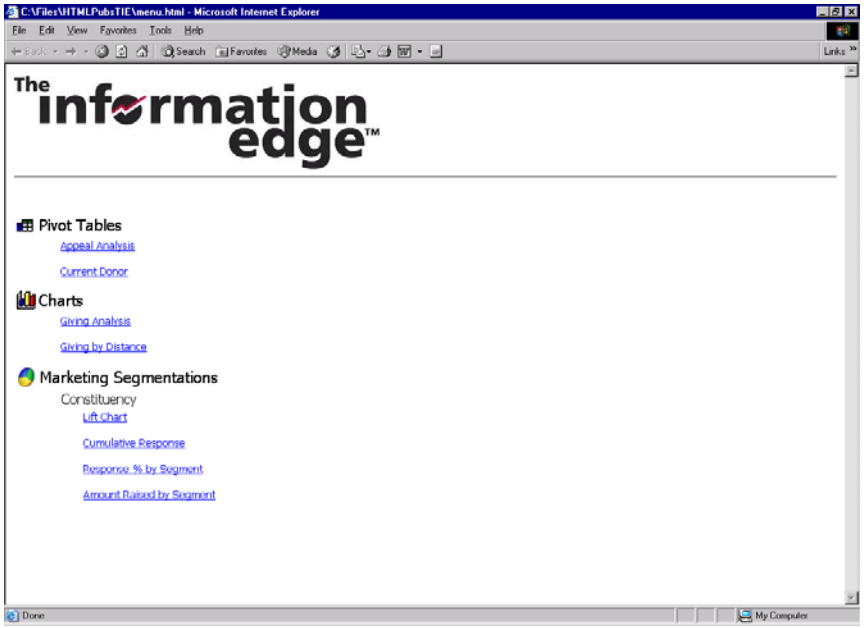
    However, in order to create the image file, ***The Information Edge*** must first process the report which can increase processing time when publications are included in cube and data mart refreshes. Because of the potential for slowing down processing, we recommend you mark the **Publish static reports** checkbox only when you are sure the static versions will be needed by your users.
11. Click **Charts** on the left and mark checkboxes by any charts you want to include in the publication. Repeat for **Pivot Tables** and **Reports**. If you have the *Marketing Segmentation* optional module, your activated **Segmentations** appear and you can mark checkboxes to publish the charts included in them.
12. After you select all the items you want to include in the publication, click **OK**. A message appears asking if you want to publish the selected items to HTML.
13. Click **Yes**. You return to the console where the publication name appears in the console.

When you create publications on a client machine, you can specify the path and **Folder** on the client machine. However, when you specify in a data mart's properties that publications process automatically each time the mart is processed, because the Schedule function runs on the server, it attempts to output the publication to the specified path and folder on the server. If the path and folder do not exist on the server, the publication fails. If you are scheduling automatic processing of publications in the mart, ensure the same path and folder exist on the server to enable the publication to process.

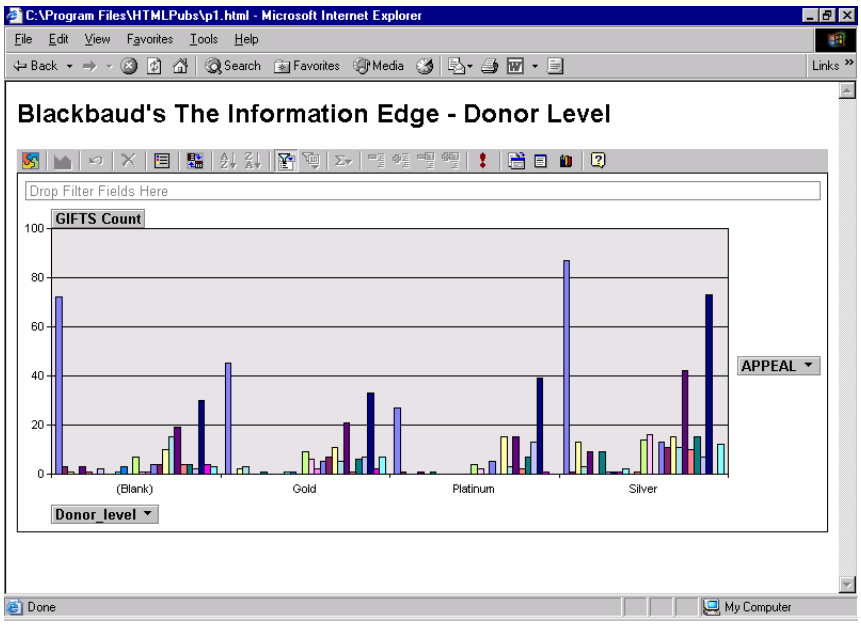
➢ Viewing a Publication

1. Locate the folder where you specified to save the publication. All files needed by the publication are stored in the directory.

2. The publication automatically includes a “menu.html” file. This file serves as a central location with links to all the items you included in the publication. Open the menu.html file in your browser.



3. Click an item to view it in your browser.



When viewed with *Internet Explorer* version 5.x or higher on a machine with *Office XP* installed, the selected item is fully interactive. Users can manipulate fields and views, and perform the actions available for an item from within ***The Information Edge***.

4. Close your browser to exit the publication.

Schedules

On the Schedules tab you can set up schedules to refresh your data marts automatically at specified time intervals. For example, you can specify to refresh the data nightly or whenever there is less activity on your network.

In order for data marts to run on a schedule, the SQL Server Agent service must be running on the machine on which ***The Information Edge*** database is located.

➢ **Scheduling automatic data mart processing**

Please note the following if you are scheduling an automatic refresh for a data mart that includes a Crystal Report:

When a data mart processes via a schedule, the *SQL Server* Agent logs in as the user specified in the properties for the MSSQLSERVER service. The Local System Account is selected by default (although you can specify another account and password to use in the properties for the service).

If the account specified for use by the *SQL Server* Agent does not have a printer installed and the data mart includes a *Crystal Report*, a "No Default Printer" error occurs when the scheduled data mart processing takes place. When processing the data mart manually, your current login is used, which in most cases will have a printer installed so the error will not occur.

When using a client-server installation, the *SQL Server* Agent operates on the server, so the Local System Account (or other specified account) on the server must have a printer installed.

1. In *Configuration*, select the Schedules tab.

   If you see a message stating that "SQL Agent is not currently running. Schedules will not be processed," you must start the service before data marts can refresh on a schedule.

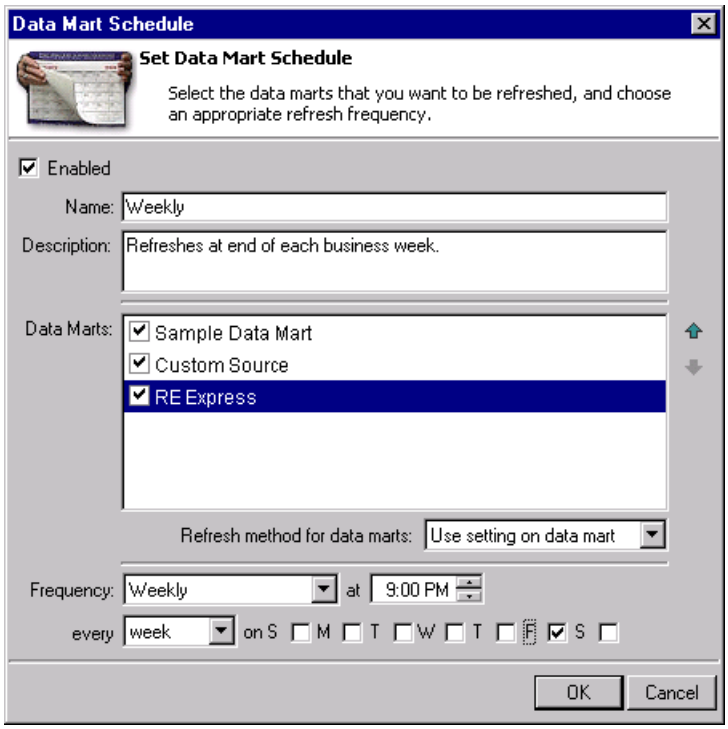
   The SQL Server Agent service must be running on the machine on which ***The Information Edge*** database is located. To start the service:

   a. Select **Start**, **Programs**. Select **Microsoft SQL Server**, **Service Manager**.

   b. Click the down arrow in the **Services** field and select SQL Server Agent.

   c. Click **Start/Continue**. You may also want to mark the **Auto-Start service when OS starts** checkbox to ensure the agent runs automatically.

2. From the action bar, select **New**. The Data Mart Schedules screen appears.


Data Mart Schedule
Set Data Mart Schedule
Select the data marts that you want to be refreshed, and choose an appropriate refresh frequency.
Enabled
Name: Weekly
Description: Refreshes at end of each business week.
Data Marts:
Sample Data Mart
Custom Source
RE Express
Refresh method for data marts: Use setting on data mart
Frequency: Weekly at 9:00 PM
every week on S M T W T F S
OK
Cancel

3. Mark the **Enabled** checkbox to create a new schedule. Enter a **Name** and **Description** to determine how the schedule displays in ***The Information Edge***.

If you are scheduling a data warehouse refresh, the individual data marts contained in the warehouse should be refreshed first to ensure the warehouse contains the most up-to-date information. Mark the checkboxes by any data marts contained in the warehouse and use the up and down arrows to specify the order in which they should be processed.

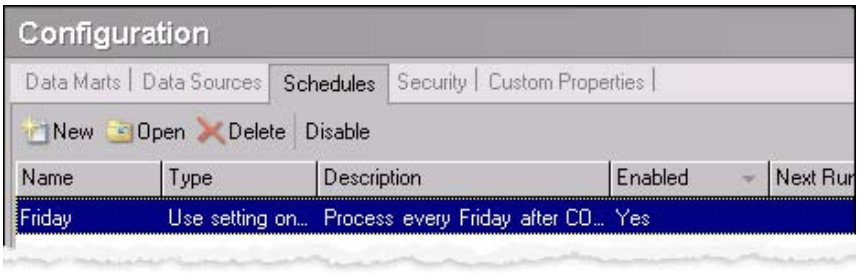
4. Mark checkboxes by the data marts you want to include in this schedule. If you are scheduling multiple marts, they are processed in the order in which they appear in the **Data Mart** box. If you want to change this order, use the up and down arrows on the right.

5. Specify the **Refresh method for data marts**. You can use the setting established when you added the mart, or select a full or incremental refresh. This setting affects only data marts created with *RE:Express* and custom data marts for which you specified incremental settings. All other data marts always fully refresh.

In most cases with an *RE:Express* data mart, you can use an incremental refresh. One example of when you would want to run a full refresh is if you have used the ***Raiser's Edge*** table entry cleanup utility to remove inconsistencies in your entries (such as "St." versus "Street"). This would change entries on some records; however, changes made in this manner would not appear in an incremental refresh.

We recommend you run incremental refreshes often (when available) to include frequently changing information such as gift and biographical information, as well as new records, in your data marts. You should also occasionally run full refreshes to include data that changes less frequently (fund names or code table descriptions in *RE:Express* data marts for example).

6. Establish the **Frequency** for the schedule. The available options change according to your selections. For example, if you select to refresh on a specific day each month, additional options appear for you to select a day.
7. Click **OK** to save your settings and return to the Schedules tab where the new schedule now appears.



Once you establish a schedule for automatically processing data in data marts, you can click **Open** if you want to change the schedule or add or remove data marts for it.

You can click **Delete** to delete the schedule. If you remove the schedule, it is removed from all data marts included in it.

If you want to temporarily disable a scheduled refresh for a data mart (for example, a refresh may be scheduled for a time when your server will be offline for maintenance), click **Disable**. When you are ready for the schedule to resume, you can click **Enable**.

In a data mart's properties, you can select to process exports, WriteBacks, and HTML Publications automatically each time the mart is refreshed. To access properties, select the data mart in the tree view, right-click on it, and select **Data Mart Properties**.

8. Click **Close** to exit the Data Mart Schedules screen and return to the console.

Data Sources

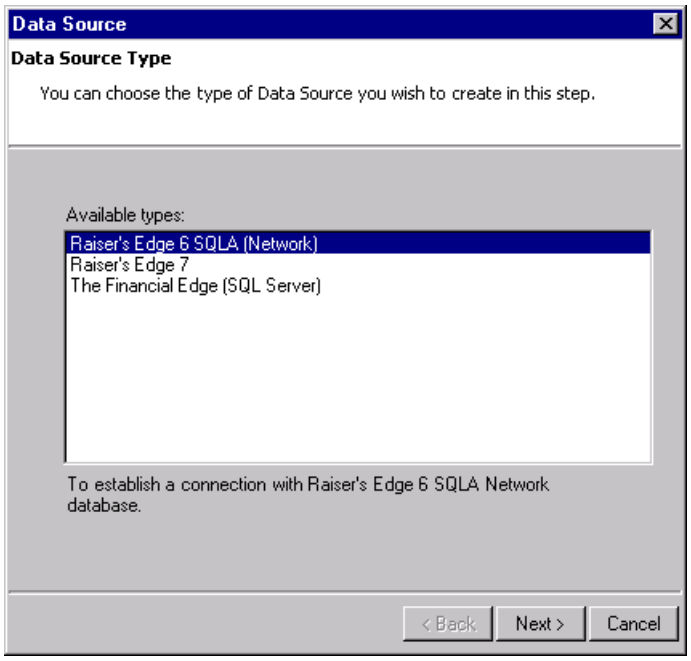
You can view and add ***Raiser's Edge*** database sources to ***The Information Edge***. You can add a source manually if you want to view properties as you add it, or you can click a single button to import all your ***Raiser's Edge*** and ***Financial Edge*** databases at the same time.

The Information Edge uses a ***Raiser's Edge*** login on *SQL Server* to connect with ***The Raiser's Edge*** database. For more information, see "SQL Server Logins" on page 135.

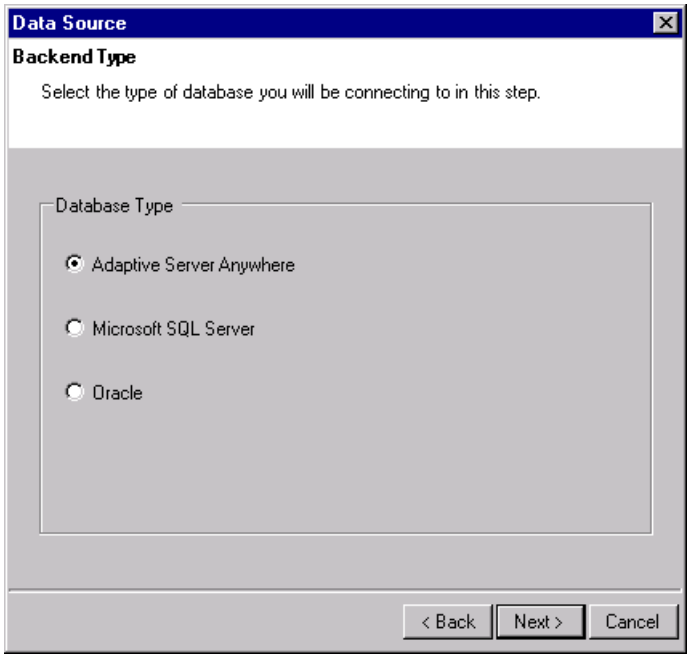
➢ Adding a data source

1. In *Configuration*, select the Data Sources tab.

2. From the action bar, select **New**. The Data Source Type screen appears.


Data Source
Data Source Type
You can choose the type of Data Source you wish to create in this step.
Available types:
Raiser's Edge 6 SQLA (Network)
Raiser's Edge 7
The Financial Edge (SQL Server)
To establish a connection with Raiser's Edge 6 SQLA Network database.
< Back
Next >
Cancel

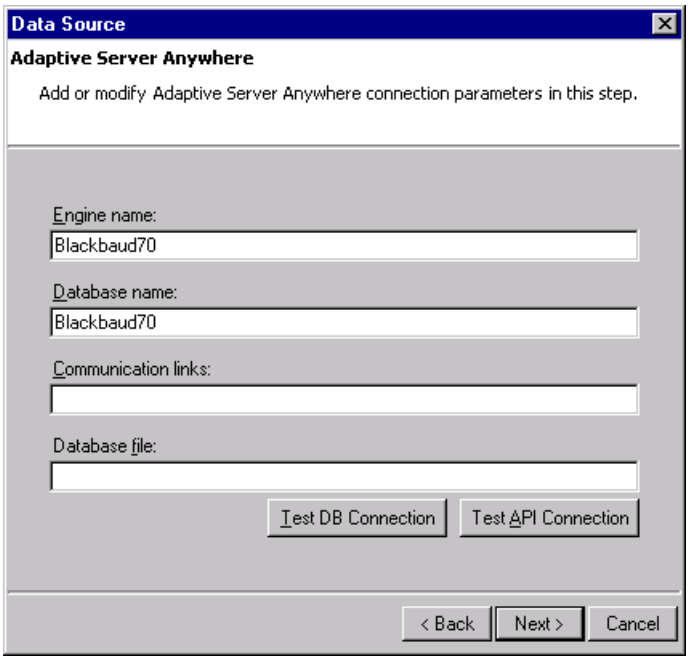
3. Select the source you want to add in the **Available types** box, and click **Next**. Depending on the source you select, the Backend Type screen may appear.



4. Mark an option to indicate whether the source you are adding is an **Adaptive Server Anywhere**, **Microsoft SQL Server**, or **Oracle** database.

If you selected **Adaptive Server Anywhere**, proceed to the next step. If you selected **Microsoft SQL Server**, skip to step 8. If you selected **Oracle** skip to step 11.

5. Click **Next**. The Adaptive Server Anywhere screen appears.

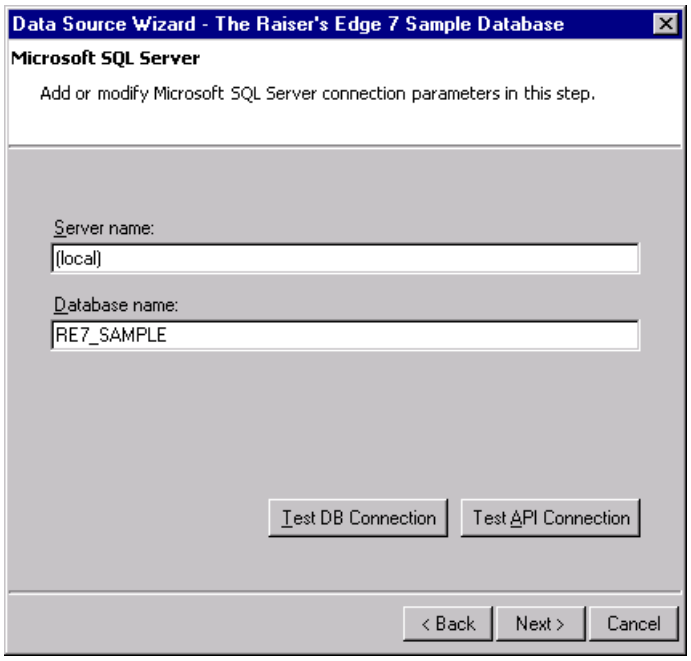


6. Enter the **Engine name** and **Database name** for the database. ***The Information Edge*** uses this information to identify the database on the network. If you want to specify a protocol for how the database communicates with ***The Information Edge***, enter it in the **Communication links** field. If you want to link to a specific database by file name, enter it in the **Database file** field.

   Click **Test DB Connection** to attempt to connect to the database using the settings you specified. If the connection is successful, proceed to step 14 of this procedure. If it is not successful, double check the connection parameter information you entered.

   Click **Test API Connection** to connect with ***The Raiser's Edge*** through its Application Program Interface (API). This connection verifies that your ***Raiser's Edge*** client is set up properly to interact with ***The Information Edge***.

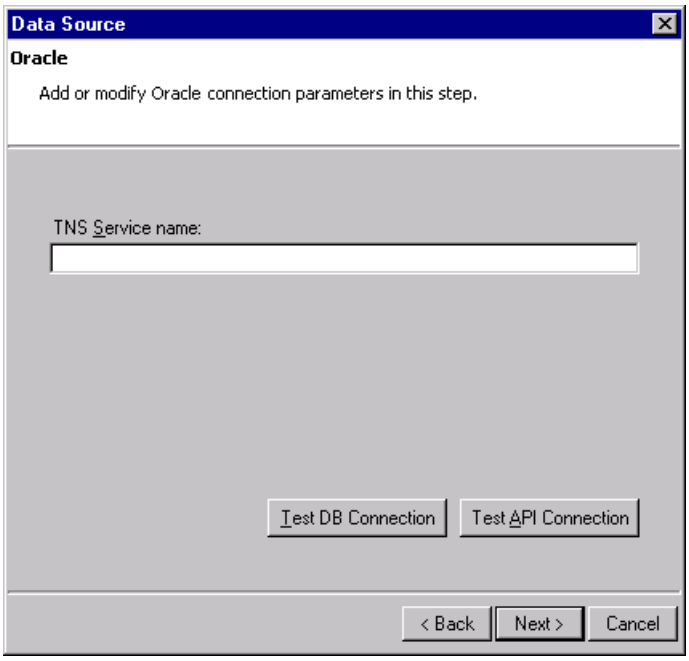
7. Click **Next**. The Microsoft SQL Server screen appears.



8. Enter the **Server name** and **Database name** for the database.
9. Click **Test DB Connection** to attempt to connect to the database using the settings you specified. If the connection is successful, proceed to step 14 of this procedure. If it is not successful, double check the connection parameter information you entered.

   Click **Test API Connection** to connect with ***The Raiser's Edge*** through its Application Program Interface (API). This connection verifies that your ***Raiser's Edge*** or ***Financial Edge*** client is set up properly to interact with ***The Information Edge***.

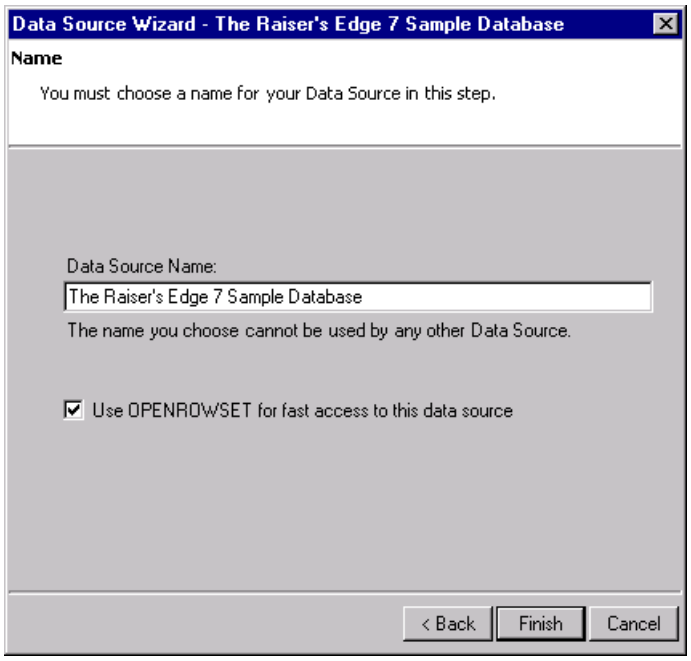
10. Click **Next**. The Oracle screen appears.



11. Enter the **TNS Service name** for the Oracle database. To find the TNS name, look in your Oracle installation “tnsnames.ora” file.
12. Click **Test DB Connection** to attempt to connect to the database using the settings you specified. If the connection is successful, proceed to step 14 of this procedure. If it is not successful, double check the connection parameter information you entered.

    Click **Test API Connection** to connect with ***The Raiser’s Edge*** through its Application Program Interface (API). This connection verifies that your ***Raiser’s Edge*** client is set up properly to interact with ***The Information Edge***.

13. Click **Next**. The Name screen appears.


Data Source Wizard - The Raiser's Edge 7 Sample Database
Name
You must choose a name for your Data Source in this step.
Data Source Name:
The Raiser's Edge 7 Sample Database
The name you choose cannot be used by any other Data Source.
Use OPENROWSET for fast access to this data source
< Back
Finish
Cancel

14. Enter a **Data Source Name**. This name cannot be used by any other source and displays on the Defined Data Sources screen in ***The Information Edge***.
15. Mark the **Use OPENROWSET for fast access to the data source** checkbox to enable faster processing of the source data. OPENROWSET includes all the connection information necessary to access remote data from a specific source.

    To increase the speed of data access, we recommend you mark this checkbox. If you experience problems importing the source data in the next step, you can check the properties of the data source and unmark this checkbox.
16. Click **Finish**. You return to the Defined Data Sources screen where your new data source appears in the box.
17. To exit the Data Sources screen and return to the console, click **Close**.

➢ Importing Blackbaud databases automatically

If you have more than one Blackbaud database, you can import them all into ***The Information Edge*** by clicking a single button.

1. In *Configuration*, select the Data Sources tab.
2. On the Action bar, click **Import**.

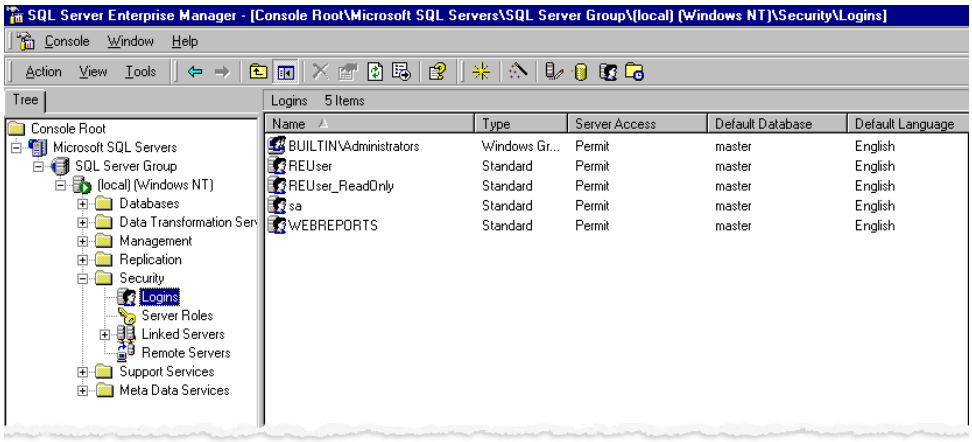
   The Information Edge examines your system for ***Raiser's Edge*** and ***Financial Edge*** databases and automatically imports them as sources. The imported databases appear on the Data Sources tab.

3. To check the properties for a source, select the source and click **Open**. The Data Source Wizard screen appears. For a description of each screen in the Data Source Wizard, see “Adding a data source” on page 129.

   You can now create data marts based on export files from the Blackbaud data sources you imported. For more information about creating these data marts, see “Creating and installing an RE:Express data mart” on page 26 and “Creating and installing an FE:Express data mart” on page 47.

SQL Server Logins

The Information Edge uses a ***Raiser’s Edge*** login on *SQL Server* to connect with ***The Raiser’s Edge*** database. You can view the logins enabled for it in *SQL Server Enterprise Manager*.



The **REUser** login enables ***The Information Edge*** to connect to the server on which ***The Raiser’s Edge*** resides. The connection has rights only to ***Raiser’s Edge*** databases. If a connection to the server cannot be made using the **REUser** login, ***The Information Edge*** attempts to connect to the server using *Windows* Authentication. If a connection still cannot be made, an error message appears.

The **REUser** log in has DBO (database owner) rights to the database because ***The Raiser’s Edge*** uses it to log into the database. ***The Raiser’s Edge*** needs full database owner rights to perform all its functions, such as creating tables and views. For example, tables are created for static queries, and a wide range of temporary tables and views when running reports. **REUser** can also make more complicated changes to the database schema during an upgrade when database revisions run. Therefore, **REUser** must be able to add, drop, and alter tables, stored procedures, and functions.

It is important to note that the **REUser** login has DBO rights only for the ***Raiser's Edge*** database, not for any other databases that may be running on the server. It is also important to note that connecting to the ***Raiser’s Edge*** server using the **REUser** login requires that the instance of *SQL Server* be set to SQL Server and Windows Authentication and not Windows Authentication only. If Windows Authentication only is specified, the connection to the server will fail even when the **REUser** login is present on the server.

The **REUser_ReadOnly** and **WEBREPORTS** logins are not used by ***The Information Edge***. **REUser_ReadOnly** is used by ***The Raiser's Edge*** for users who do not have security rights to edit records, and **WEBREPORTS** is used by *RE:Anywhere*, the Web-based version of ***The Raiser's Edge***.

Security

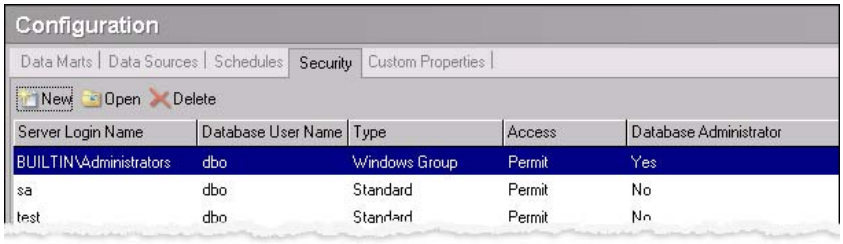
Use the Security tab to add and remove users from ***The Information Edge*** database and check properties for users already logged into the database. You can specify users as database administrators or users.

Database administrators have full access to all data marts and can add and remove other users. Users can create and view reports; however, they cannot change the structure of the database tables. For example, those with user rights cannot add dimensions to a cube.

Additionally, users with administrative rights have full access to records in ***The Raiser's Edge*** - even if those rights are not explicitly set in ***The Raiser's Edge***. When editing an export definition for an *RE:Express* data mart, an ***Information Edge*** user can view and edit ***Raiser's Edge*** records without security restrictions. The same is true of ***The Financial Edge*** and *FE:Express* data marts.

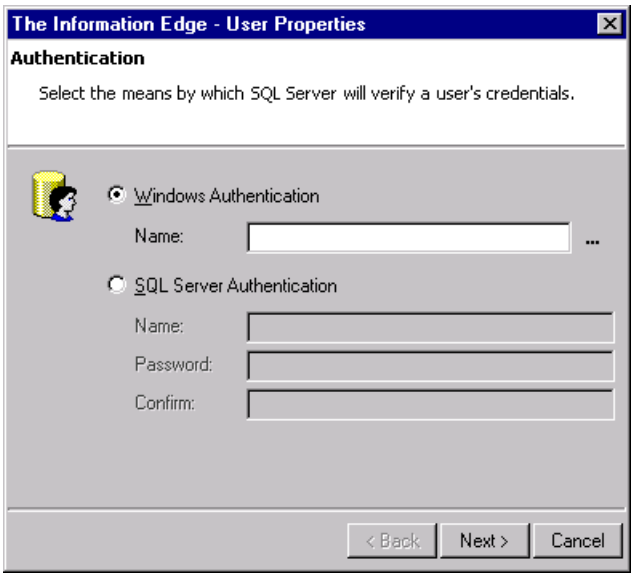
➢ **Adding database users and setting security access for them**

1. In Configuration, select the Security tab.



You can view details about an existing user by selecting the user and clicking **Open**. You can remove a user by selecting the user and clicking **Delete**.

2. On the menu bar, select **New**. The Authentication screen appears.

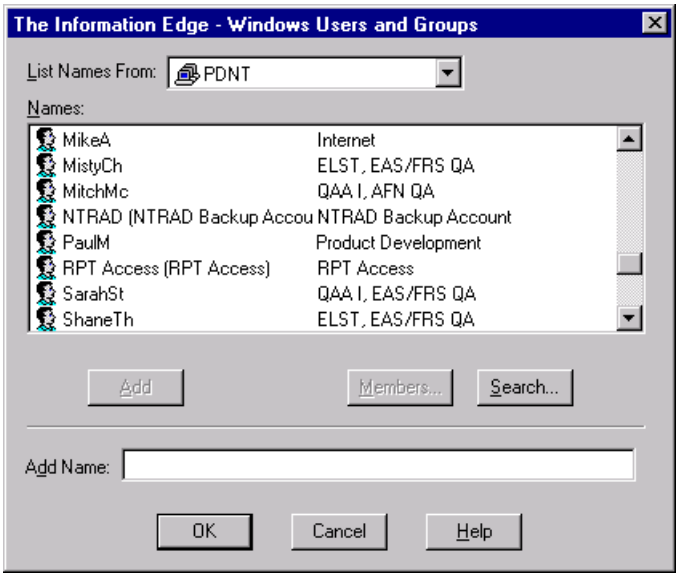


3. The available authentication options are based on how your authentication is established in *SQL Server.*

   To use **SQL Server Authentication**, mark that option and enter the **Name** and **Password** you established for the user in your installation of *SQL Server.* Skip to step 7 of this procedure.

   To specify that the user should access *SQL Server* using the same information used to log into *Windows*, mark the **Windows Authentication** option and proceed to the next step of this procedure.

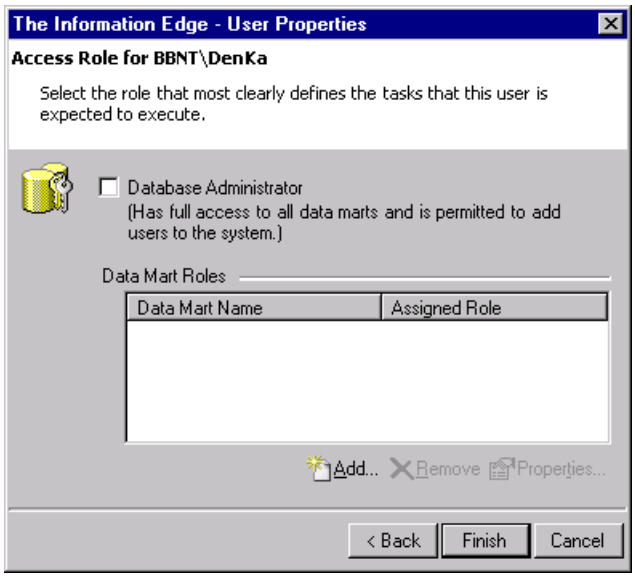
4. Browse to locate the user you want to add. The Windows Users and Groups screen appears.



5. Select the network on which the user is located in the **List Names From** field. Select a user and click **Add**. The user appears in the **Add Name** field.

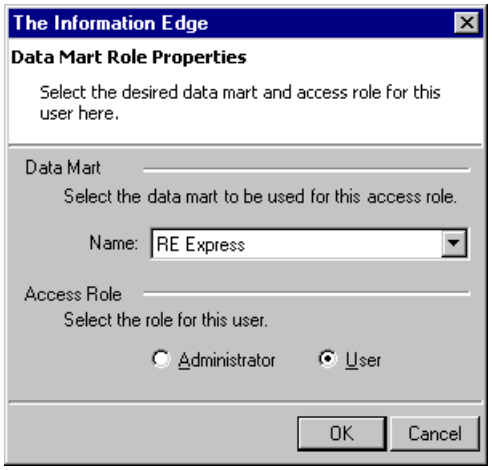
If the user is a member of a group, you can select the group, click **Members**, and select the member from the list that appears.

6. Click **OK** to return to the Authentication screen. The selected user now appears in the **Name** field.
7. Click **Next**. The Access Role screen for the user appears.


The Information Edge - User Properties
Access Role for BBNT\DenKa
Select the role that most clearly defines the tasks that this user is expected to execute.
Database Administrator
(Has full access to all data marts and is permitted to add users to the system.)
Data Mart Roles
Data Mart Name
Assigned Role
Add...
Remove
Properties...
< Back
Finish
Cancel

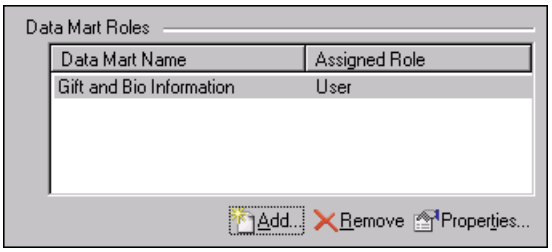
8. If you want this user to have full access to ***The Information Edge*** database, mark the **Database Administrator** checkbox. Database administrators have full access to all data marts and can add and remove other users.

   If you want the user to have limited access, leave the checkbox unmarked and click **Add** under the **Data Mart Roles** frame. The Data Mart Role Properties screen appears.



9. On this screen, you can select a data mart in the **Name** field and specify whether the user should have **Administrator** or **User** access for that individual data mart. Click **OK** to return to the Access Role screen. User rights enable users to create and view reports; however, they cannot change the structure of the database tables. For example, those with user rights cannot add dimensions to a cube.

   The selected data mart and role now appear in the **Data Mart Roles** frame.



10. Click **Finish**. You return to the Database Users screen. The new user now appears in the grid.
11. To exit the Database Users screen and return to the console, click **Close**.

Analytics

Chapter 4

Contents

Creating Reports **142**
Quick Tips for Using Pivot Tables and Charts **143**
Pivot Tables **145**
Pivot Table Field List Screen 146
Pivot Table Commands and Options 146
Captions Tab 147
Report Tab 147
Behavior Tab 148
Accessing Raiser's Edge or Financial Edge Records from Pivot Tables 152
Charts **154**
Chart Field List Screen 154
Chart Commands and Options 155
General Tab 155
Border/Fill Tab 156
Data Details Tab 156
Type Tab 157
3D View Tab 157
Show/Hide Tab 158
Data Analyzer Views **161**
Data Analyzer BusinessCenter 161
Custom Crystal Reports **165**
Copying Reports **168**
Deleting and Moving Reports **169**
Dashboards **169**

Procedures

Adding a report 142
Adding a new Pivot Table 148
Drilling Through a Pivot Table to records 152
Adding a new Chart 158
Adding a new Data Analyzer View 162
Creating a custom Crystal Report 165
Importing a custom Crystal Report 167
Copying a report 168
Creating a Dashboard and adding items to it 169

In *Analytics*, you can create Pivot Tables, Charts, Data Analyzer Views, and Crystal Reports to help you analyze your data. After you create reports, you can place them on Dashboards so you can view multiple reports at the same time.

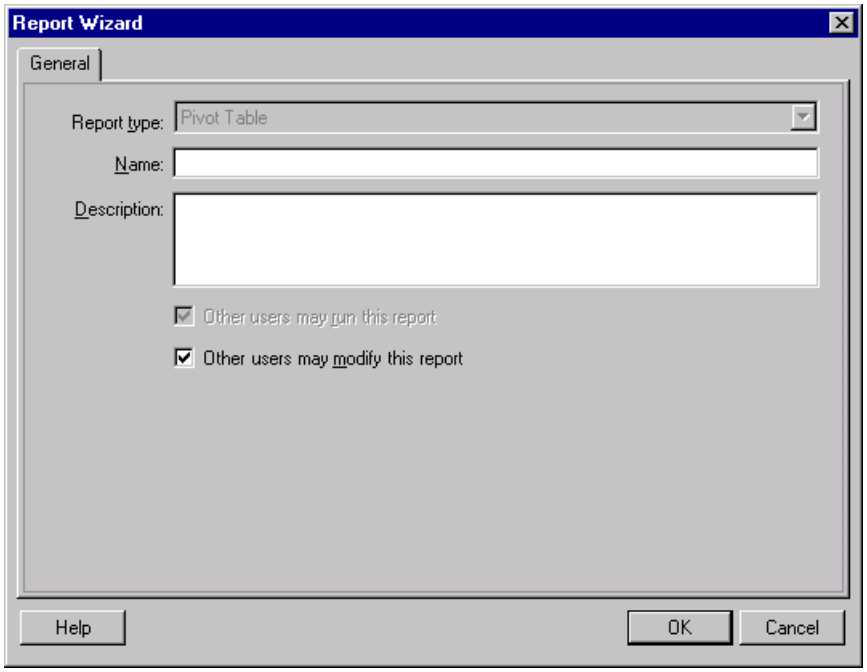
Reports are dynamic so each time one is viewed, the most up-to-date information displays. When you create your reports, you can specify whether or not you want other users to be able to run or change them.

Creating Reports

To create a report, you must first specify certain properties for it, such as a name and the cube containing the data on which it will be based. After specifying properties, the designer for the selected type of report appears, where you can manipulate and interact with the data.

➢ Adding a report

1. On the *Analytics* tree view, click **Reports** under the data mart containing the cube on which you want to base a report. Click **New** in the action bar and specify the type of report you want to create.
2. The Report Wizard screen appears on the General tab.



3. Enter a **Name** to identify the report in the console.

   You can also enter a **Description** to further help you identify the report.
4. The **Other users may run this report** checkbox is locked as marked so the report can be used by other users of the program. If you want to unmark the checkbox, you must first unmark the **Other users may modify this report** checkbox. When it is marked, other users are able to edit the properties of this report.

5. If you are creating a new report, click **Finish** to save the report properties.If you are editing the properties of an existing report, click **OK** to save your changes.

   The Report Wizard closes and the report itself appears. For more information about each specific type of report, see:

   - “Adding a new Pivot Table” on page 148
   - “Adding a new Chart” on page 158
   - “Adding a new Data Analyzer View” on page 162
   - “Creating a custom Crystal Report” on page 165

Quick Tips for Using Pivot Tables and Charts

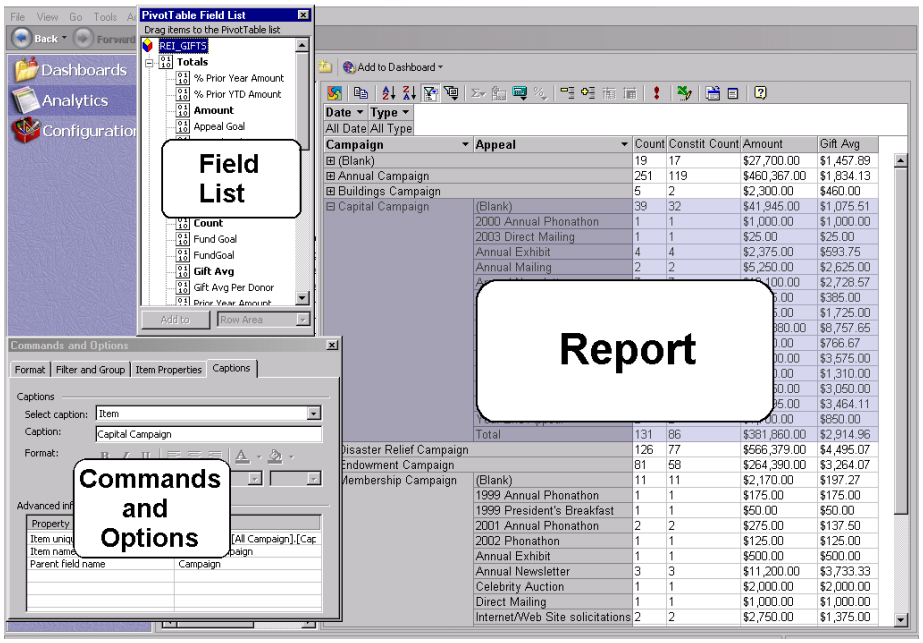
Several general tips can enhance your efficiency when working with ***The Information Edge*** reports.

- Remember the right-click menu. Pivot Tables and Charts are loaded with right-click options. The options usually change depending on the particular screen you are on.
- A Commands and Options screen is available in both Pivot Tables and Charts by right-clicking anywhere in the report and selecting **Commands and Options** from the shortcut menu that appears. This screen contains numerous formatting, display, and other selections for reports.

  We recommend you leave the Commands and Options screen open as you work in a report because the available options on it change as you select different items in the report.
- The Field List screen lists all available fields you can include in a report. The screen is accessed by right-clicking anywhere in the report and selecting **Field List**. You can drag and drop fields from the list into a Pivot Table or Chart to include them in your analysis. We suggest you drag the Field List screen over the tree view and navigation bar on the left, so you can leave it open as you work without covering up any of your Pivot Table or Chart.

To further increase the amount of room you have to work with in a report, from the **View** menu you can uncheck **Navigation Bar**.

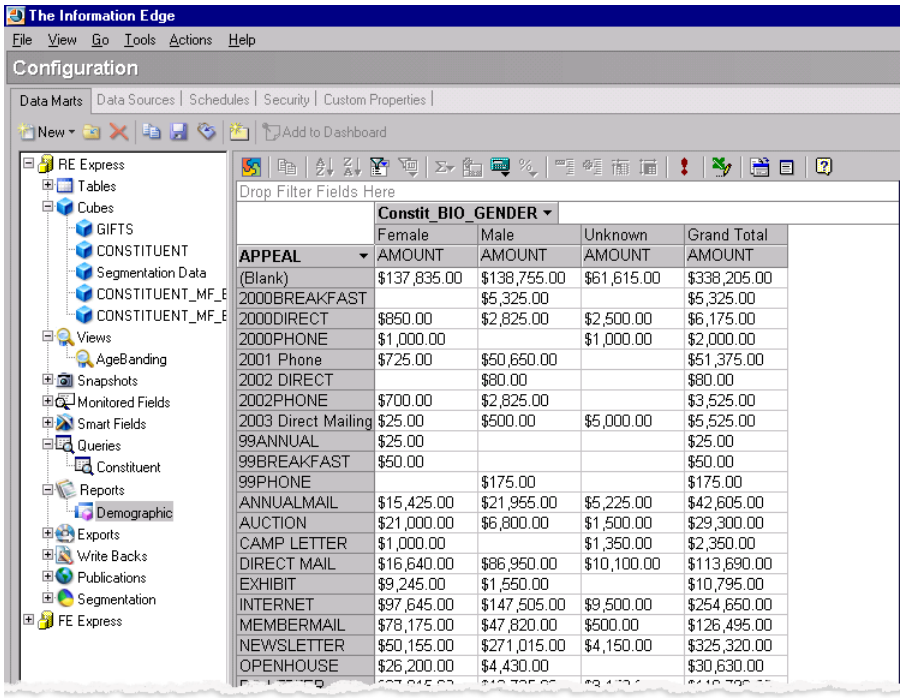
For example, when working on a Pivot Table, you can set up your ***Information Edge*** workplace to look like the following:



- To remove a column, row, or filter field from a Pivot Report, or similar item from a Chart, place the cursor on it, and drag it to the top or bottom of the screen until an “X” appears beside the cursor. When you release the mouse button, the item is removed from the report. You can always add it back again by selecting it in the Field List screen and dragging it into the appropriate area of the report.
- Data fields are identifiable on the Field List screen by the “ones and zeroes” icon beside them. Data fields provide the actual numeric data in your reports.
- When working in Pivot Tables, experiment with dragging columns into rows and vice versa to change the view and “pivot point” of your data.
- In the Command and Options for Charts, use the Type tab to experiment with displaying different types of charts (pie, bar, area, etc.).
- In Pivot Tables, you can double-click on a count in a data field and “drill through” to the source ***Raiser’s Edge*** or ***Financial Edge*** records. Additionally, you can group these records into a static ***Raiser’s Edge*** query or add attributes to them. For more information, see “Accessing Raiser’s Edge or Financial Edge Records from Pivot Tables” on page 152.
- You can place your most frequently viewed reports on a personal dashboard which enables you to quickly get information as you need it. Reports are “live,” so each time you view them (whether in *Analytics*, *Configuration*, or as part of a dashboard), they include the latest information from your ***Information Edge*** database. For more information, see “Dashboards” on page 15.

Pivot Tables

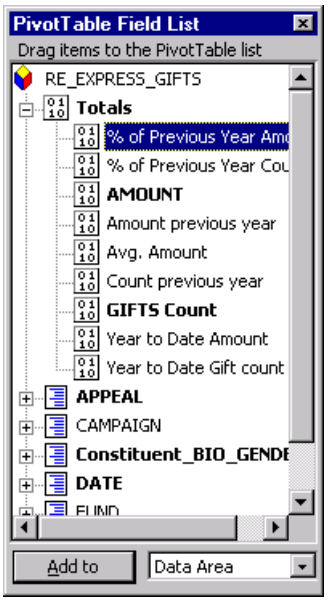
Pivot Tables are tools you can use to create custom views of your information by dragging and dropping information gathered by ***The Information Edge***. Pivot Tables provide a multidimensional view of the information you choose to include. You can rotate the rows and columns of a Pivot Table to see different summaries of your data, filter your data by displaying different pages, or display the details for specific areas of interest. Additionally, if you have ***The Raiser's Edge***, you can "drill through" to open a ***Raiser's Edge*** record directly from the Pivot Table.



For more information about using Pivot Tables, right-click anywhere in a Pivot Table and select **Help**. The Pivot Table component help file appears.

Pivot Table Field List Screen

You can access the Field List from the toolbar or by right-clicking anywhere in the Pivot Table and selecting **Field List**.



Pivot Table Field List. The information in this list originates from the OLAP cube created from the data mart you select when creating a Pivot Table. You can drag and drop fields from the list to quickly and efficiently populate the report with data. The information is displayed in a hierarchical tree view format.

Each field that originates from the OLAP cube lists with a plus sign next to the field. Expand the field to select the actual field you want for your pivot table. For example, from the **Totals** field, select **AMOUNT** for your report.

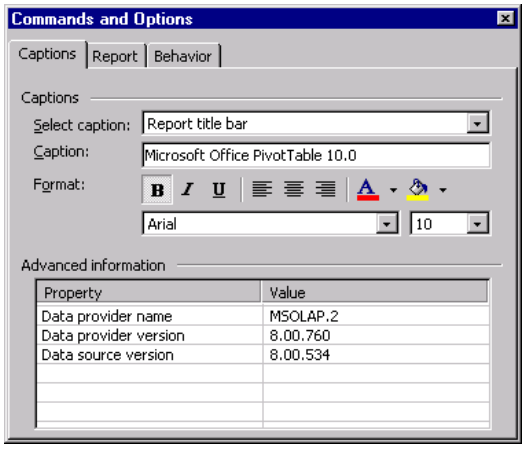
Add to. You can use the **Add to** button as an alterative to dragging and dropping information from the Pivot Table Field List. Highlight a field, select an area of the report in the drop-down, and click **Add to**.

Pivot Table Commands and Options

We recommend you leave the Commands and Options screen open as you work in a Pivot Table because the available options on it change as you select different items in the table.

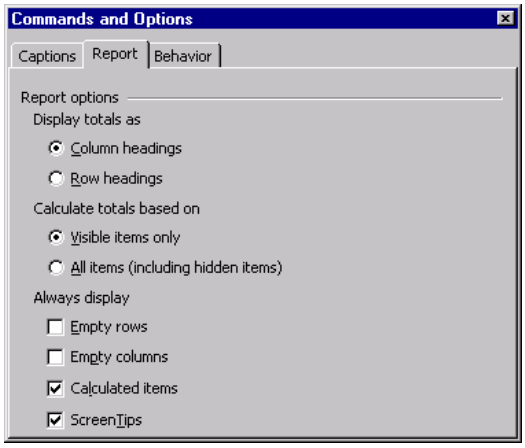
You can access the Commands and Options tabs from the toolbar or by right-clicking anywhere in a Pivot Table and selecting **Commands and Options** from the shortcut menu that appears. The Commands and Options screen consists of three tabs.

Captions Tab



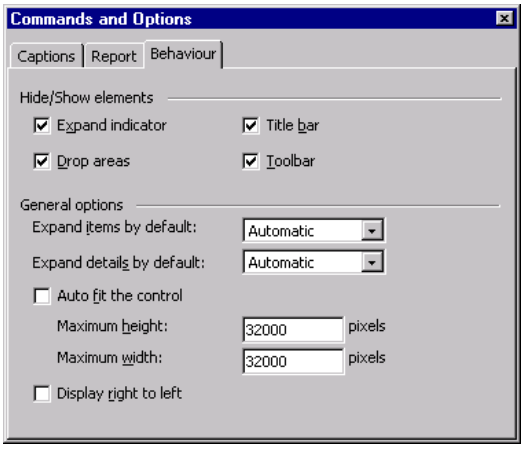
On the Captions tab, you can customize the look of elements in the pivot table, including alignment, font size, and background color. When you adjust an element, the change appears on the Pivot Table screen. On the Captions tab, you can also view advanced information such as the data source and data provider. For more information about this tab, right-click anywhere in the Pivot Table and select **Help**.

Report Tab



On the Report tab, you can establish various settings for the report such as how you want to display totals and whether you want to display empty rows and columns. For more information about this tab, right-click anywhere in the Pivot Table and select **Help**.

Behavior Tab



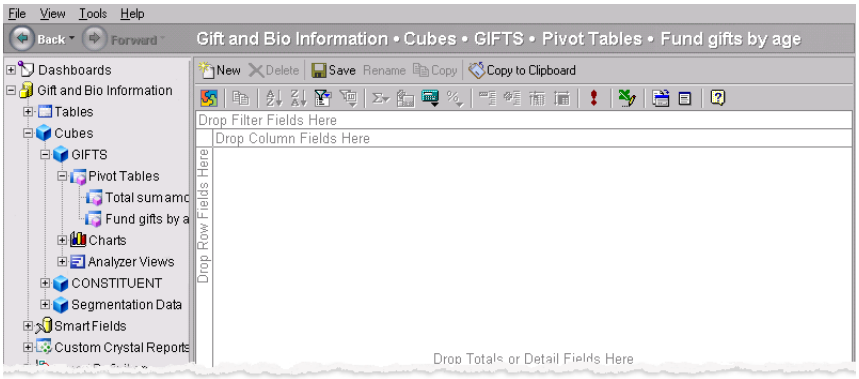
On the Behavior tab, you can specify which elements are visible on the report and set general behavior such as how items expand. For example, if you are going to publish the report to an HTML page, you may want to unmark the **Drop areas** and **Toolbar** checkboxes so those items do not appear on the page. For more information about this tab, right-click anywhere in the Pivot Table and select **Help**.

➢ Adding a new Pivot Table

Your organization is considering adding several new appeals this year with the intent of increasing donations from female constituents. Before adding the appeals, you want to analyze gift total amount given by gender for the last five years. You also want to view the success of your appeals by gender. You have already created a package using *RE:Express* that contains a cube based on gift information accessed from your ***Raiser's Edge*** database. You will now create a Pivot Table that enables you to effectively analyze this information.

1. From the *Analytics* tree view, select a data mart created with the default export fields in *RE:Express*.
2. Click **Reports** in the tree view.
3. Click **New**, **Pivot Table** on the action bar. The Report Wizard appears on the General tab.
4. In the **Data Source** field select the cube on which you want to base the Pivot Table. For this example, select the GIFTS cube.
5. Enter a name for the Pivot Table, and optionally, a description.
6. Specify whether you want other users to be able to view and edit the Pivot Table. If you do not mark either checkbox, only you will be able to view it.

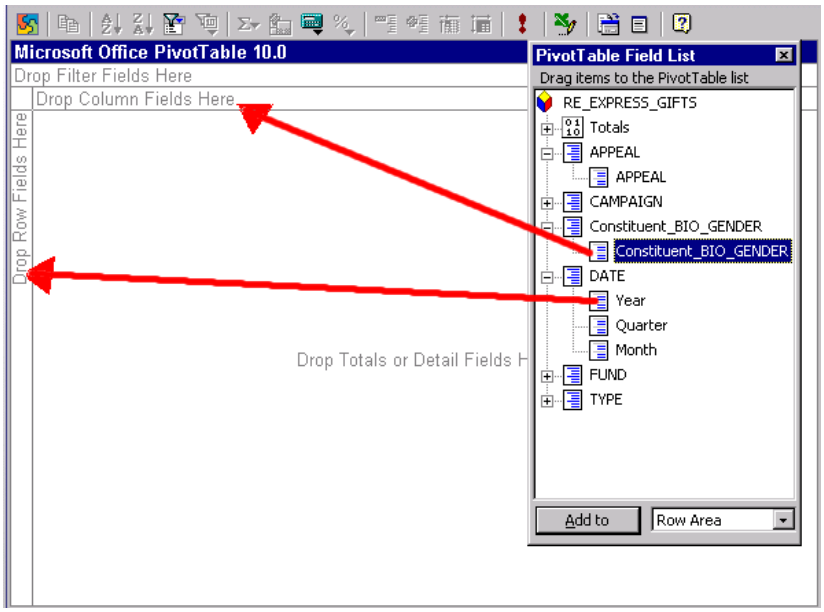
7. Click **Finish**. The Pivot Table designer appears.



8. Right-click anywhere in the designer pane, and select **Field List**. The Field List window appears.

9. From the Field List window, select the **Constituent_BIO_GENDER** field and drag it to the Drop Column Fields Here area. Select the **Year** field and drag it to the Drop Row Fields Here area.

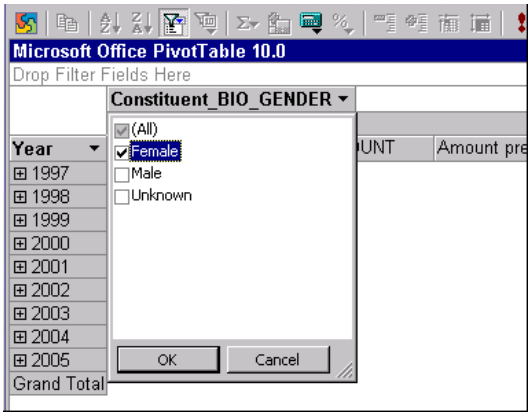
   The row and column fields are used to summarize and compare data. These fields display the unique items of data within a field down rows or across columns. The cell at each row and column intersection summarizes the data for an item.



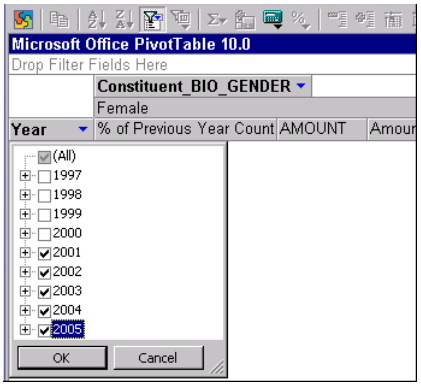
We recommend you leave the Commands and Options screen open as you work in a Pivot Table because the available options on the screen change as you select different items in a table. To access the screen, right-click anywhere in a Pivot Table and select **Commands and Options**.

You can group items. Select the items you want to group by pressing **CTRL** and clicking them. After they are selected, right-click and select **Group Items**. The selected items display as a group in the Pivot Table.

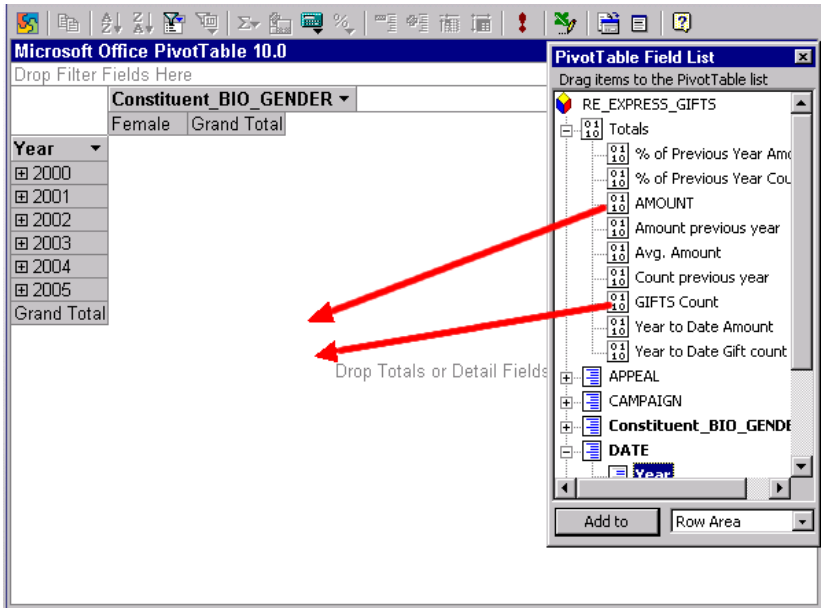
10. You want to view only information about gifts given by females. Click the down arrow beside **Constituent_BIO_GENDER** and unmark all checkboxes except **Female**.



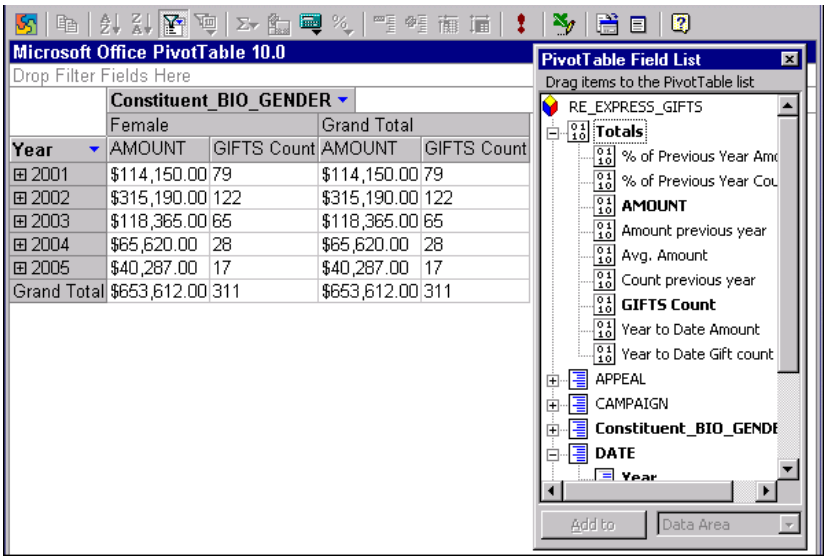
11. Similarly, you want to view only information for a five year period. Click the down arrow beside **Year** and unmark all checkboxes except **2001 - 2005**.



12. Now that you have established the rows and column for your Pivot Table, you can specify the information you want to appear in it. For this example, we want to include the gift **Amount** and **Gifts Count** data fields. Drag and drop those two fields to the Drop Totals or Detail Fields area.



The Pivot table is now populated with the data you selected.

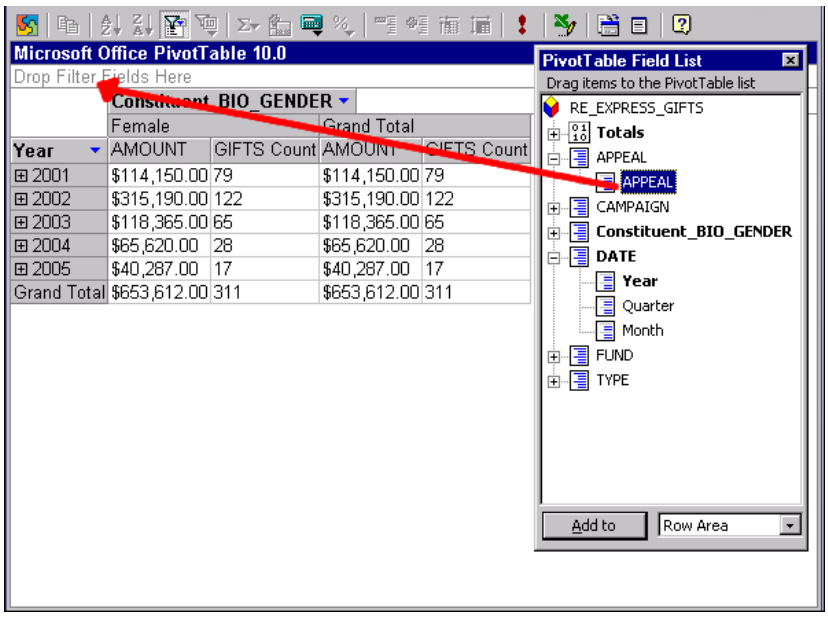


Data fields are identifiable on the Field List screen by the "ones and zeroes" icon beside them.

You can change the caption on any item by selecting it, right-clicking, selecting **Commands and Options**, and selecting the Captions tab.

Before you publish a Pivot Report, you can hide the toolbar and drop areas by right-clicking and selecting **Commands and Options**. Select the Behavior tab and unmark the **Drop areas** and **Toolbar** checkboxes. For more information about publishing, see "Publications" on page 123.

13. We now want to filter this information by Appeal. To do this, select **Appeal** from the Field List and drag it to the Drop Filter Fields Here area.



You can now click the down arrow beside Appeal and select individual appeals for which you can view gift information by gender.

14. Click **Save** in the toolbar.

    You can perform a variety of functions with the table. For example, from the action bar, you can click **Save to Clipboard** to create an image of the table you can paste into an e-mail, presentation, or other file.

    In the toolbar, you can click **Export to Excel**. In *Excel*, the Pivot Table is hot linked to the ***Information Edge*** database, which means any changes you make to the Pivot Table in *Excel* are reflected in the current data in the database.

15. To exit the Pivot Table, select another item in the tree view.

Accessing Raiser's Edge or Financial Edge Records from Pivot Tables

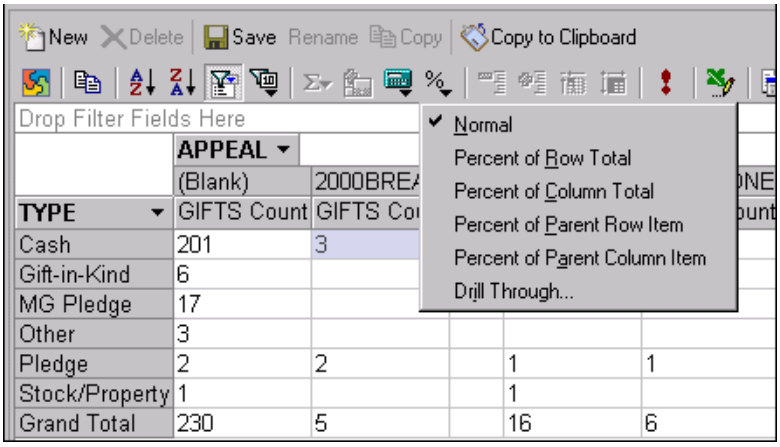
If you have ***The Raiser's Edge*** or ***Financial Edge***, you can "drill through" to open a record directly from a Pivot Table. You can also edit the record if necessary.

➢ **Drilling Through a Pivot Table to records**

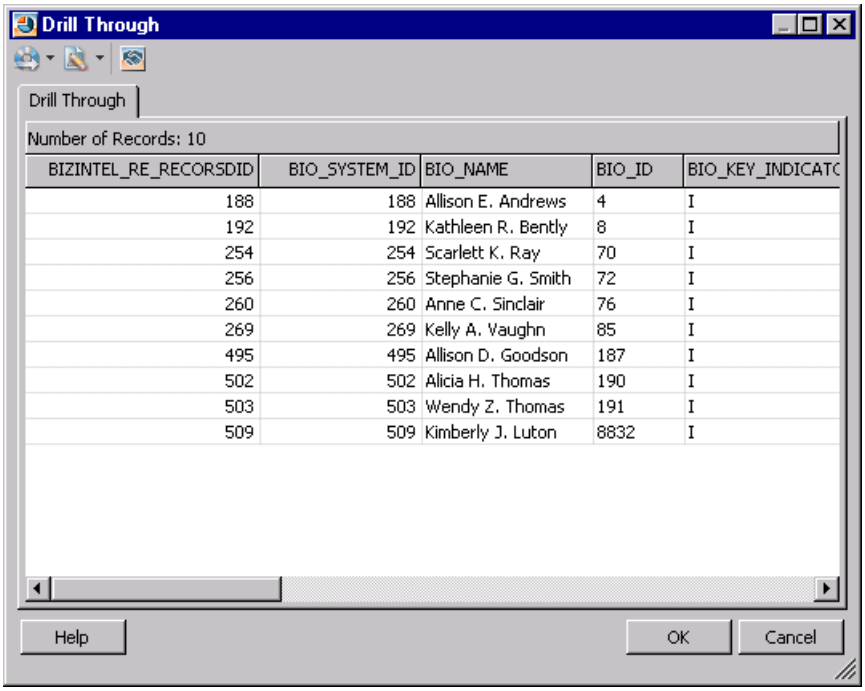
This procedure shows how to open a ***Raiser's Edge*** constituent record from a Pivot Table. You can use similar steps to open a ***Financial Edge*** record.

1. From the tree view under a cube, open an existing Pivot Table.
2. From the Pivot Table, select a cell containing records you want to view in ***The Raiser's Edge***.

3. With the cursor in the selected cell, either double-click or select **Drill Through** under the Percent toolbar.



The Drill Through screen appears.


Drill Through
Drill Through
Number of Records: 10
BIZINTEL_RE_RECORSDID
BIO_SYSTEM_ID
BIO_NAME
BIO_ID
BIO_KEY_INDICATC
188 188 Allison E. Andrews 4 I
192 192 Kathleen R. Bently 8 I
254 254 Scarlett K. Ray 70 I
256 256 Stephanie G. Smith 72 I
260 260 Anne C. Sinclair 76 I
269 269 Kelly A. Vaughn 85 I
495 495 Allison D. Goodson 187 I
502 502 Alicia H. Thomas 190 I
503 503 Wendy Z. Thomas 191 I
509 509 Kimberly J. Luton 8832 I
Help
OK
Cancel

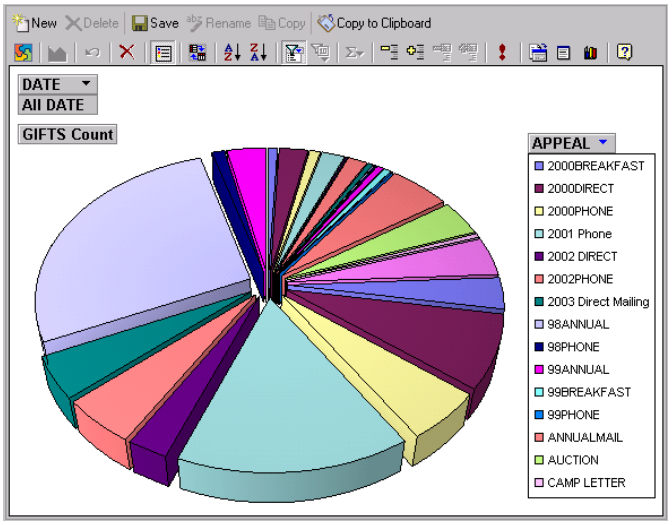
4. From the Drill Through screen, select a record and click **Go to Constituent**.
5. Enter your log in information for ***The Raiser's Edge***.

   The constituent record appears so you can view or edit it. When you close the record you return to the Drill Through screen.
6. Click **Close** to exit the Drill Through screen and return to the Pivot Table.

If you have administrator rights, you can click a button in the toolbar to create a WriteBack query including only the records in the grid, or export the records in the grid.

Charts

Charts enable you to visually compare patterns and trends in your data in a wide variety of styles.



For more information about using charts, right-click anywhere in a chart and select **Help**. The Chart component help file appears.

Chart Field List Screen

You can access the Field List from the toolbar or by right-clicking anywhere in the Chart and selecting **Field List**.

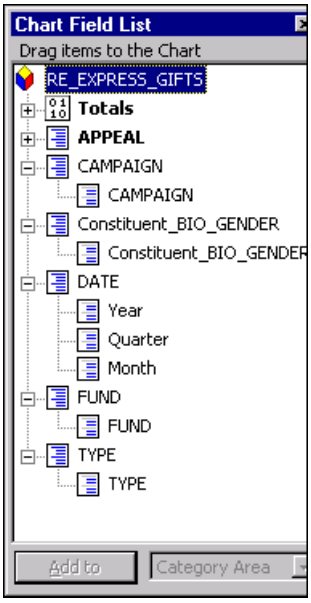


Chart Field List. The information in this list originates from the OLAP cube created from the data mart you select when creating a Chart. You can drag and drop fields from the list to quickly and efficiently populate a chart with data. The information is displayed in a graphic format of your choosing.

Each field that originates from the OLAP cube lists with a plus sign next to the field. Expand the field to select the actual field you want for your chart. For example, from the **Totals** field, select **AMOUNT** for your report.

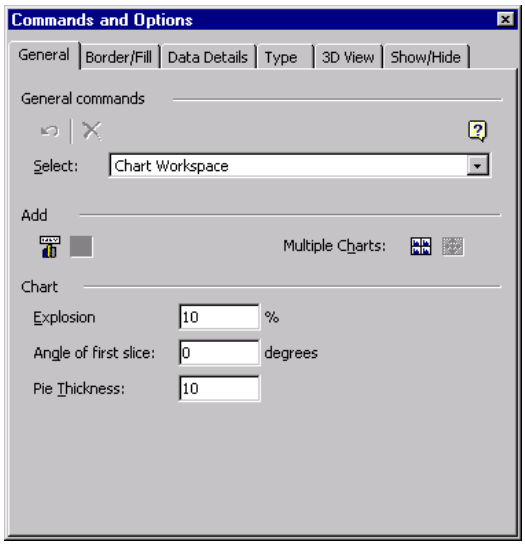
Add to. You can use the **Add to** button as an alterative to dragging and dropping information from the Chart Field List. Highlight a field, select an area of the chart in the drop-down, and click **Add to**.

Chart Commands and Options

You can access the Commands and Options tabs from the toolbar or by right-clicking anywhere in a Chart and selecting **Commands and Options** from the shortcut menu that appears. The Commands and Options screen consists of six tabs (although the number of tabs may vary depending on the data and type of chart you are creating).

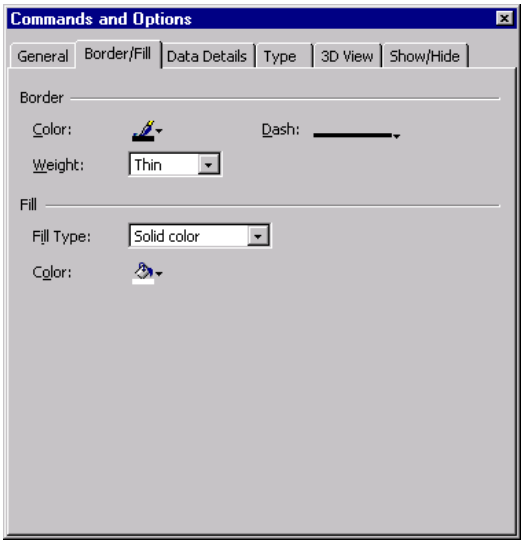
We recommend you leave the Commands and Options screen open as you work in a chart because the available options on it change as you select different items in the chart.

General Tab



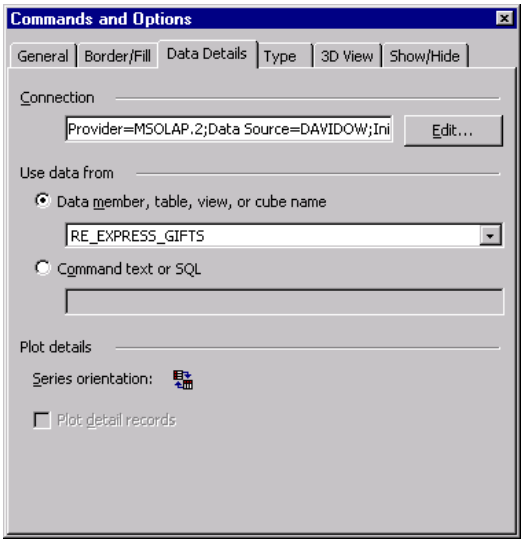
On the General tab, you can add and remove items from a chart, add a title to a chart, display multiple charts, and specify other display options for a chart. For more information about this tab, right-click anywhere in the chart and select **Help**.

Border/Fill Tab



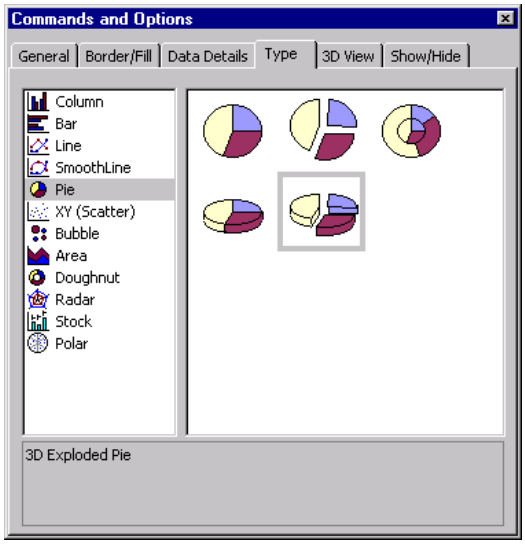
On the Border/Fill tab, you can specify border and background display options for a chart. For more information about this tab, right-click anywhere in the chart and select **Help**.

Data Details Tab



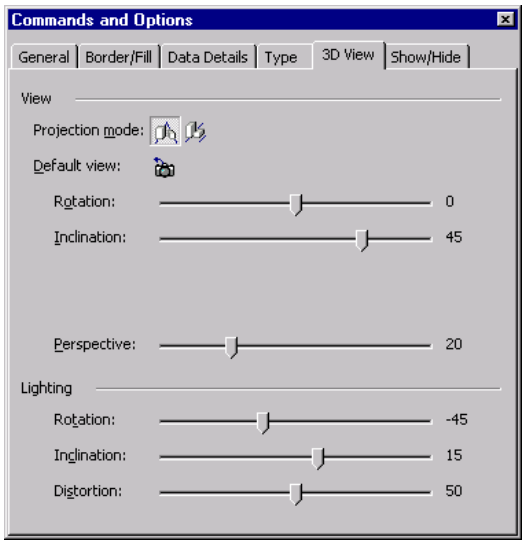
On the Data Details tab, you can view and edit the data connection, specify a view, table, or cube from which data should be used, and specify how the information is plotted on a chart. For more information about this tab, right-click anywhere in the chart and select **Help**.

Type Tab



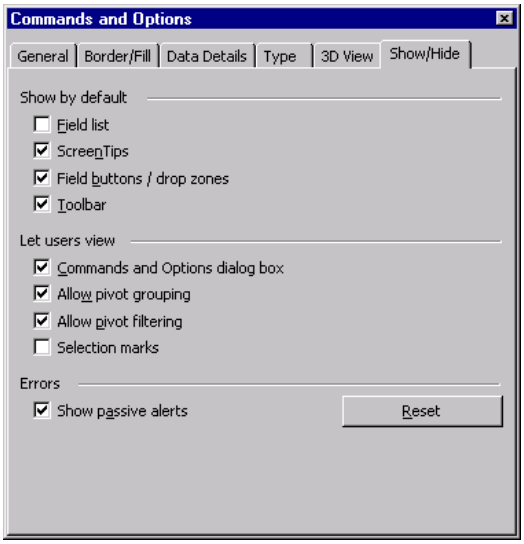
On the Type tab, you can specify the type of chart you want to display. Select a category on the left and a specific type within that category on the right. For more information about this tab, right-click anywhere in the chart and select **Help**.

3D View Tab



On the 3D View tab, you can specify special viewing effects for the chart. These effects vary according to the type of chart you are creating. For most charts, you can specify the angle of rotation and inclination, change the perspective, and change the lighting. For more information about this tab, right-click anywhere in the chart and select **Help**.

Show/Hide Tab



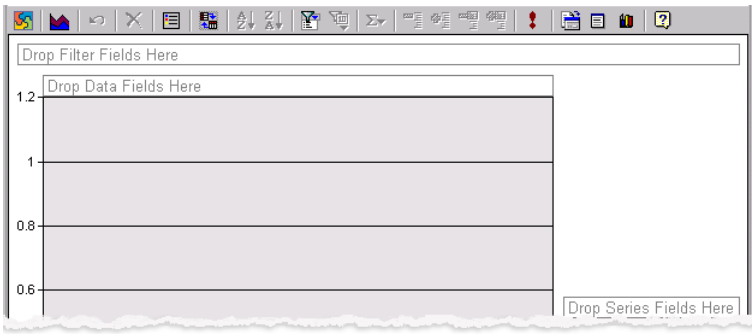
On the Show/Hide tab, you can specify the items that appear on the chart by default, items that users of the chart can view, and whether you want to see passive alerts in error situations, such as when a database connection fails. When you display passive alerts, you can click the exclamation icon to view more information about the error. For more information about this tab, right-click anywhere in the chart and select **Help**.

➢ Adding a new Chart

Your organization wants to analyze the status of certain aspects of your appeals. You want to view the total number and amount of each gift type given to each appeal. Furthermore, you want to filter this information by city to see if you should concentrate any special events or other appeals in certain geographic areas. You have already created an *RE:Express* data mart containing a cube based on gift information from your ***Raiser's Edge*** database. You will now create a chart that enables you to effectively analyze this information.

1. From the *Analytics* tree view, select a data mart created with the default export fields in *RE:Express*.
2. Click **Reports** in the tree view.
3. Click **New**, **Chart** on the action bar. The Report Wizard appears on the General tab.
4. In the **Data Source** field select the cube on which you want to base the chart. For this example, select the GIFTS cube.
5. Enter a name for the Chart, and optionally, a description.
6. Specify whether you want other users to be able to view and edit the chart. If you do not mark either checkbox, only you will be able to view it.

7. Click **Finish**. The Chart designer appears.

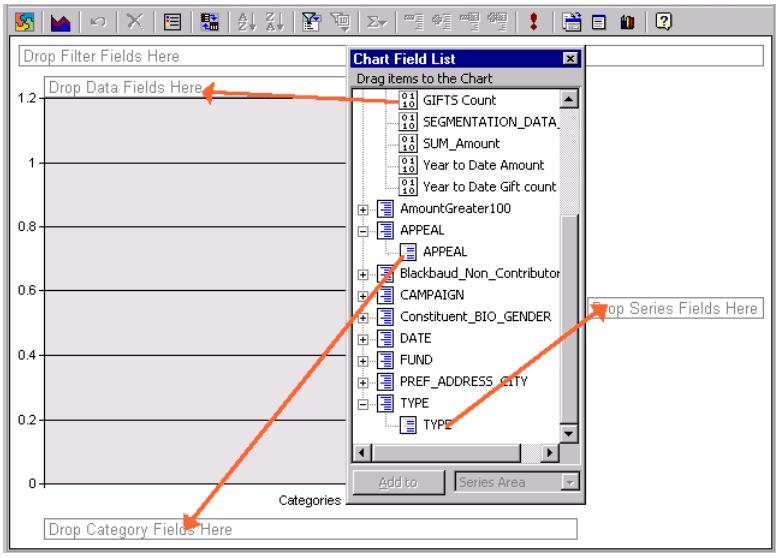


8. Right-click anywhere in the designer pane, and select **Field List**. The Field List window appears.
9. From the Field List window, select the **Appeal** field and drag it to the Drop Category Fields Here area.

   When you move a field to the category area, the unique items of data are displayed as categories, or related groups of data. Each category consists of one point from each data series. Category labels usually appear across the category (x) axis of the chart, although this can vary depending on the type of chart you are using.
10. Select the **Type** field and drag it to the Drop Series Fields Here area.

    When you drag a field to the series area, the items of data within the field are displayed as data series in the chart. These series are represented by colored data markers, and their names appear in the chart legend.
11. Select the **GIFTS Count** data field and drag it to the Drop Data Fields Here area.

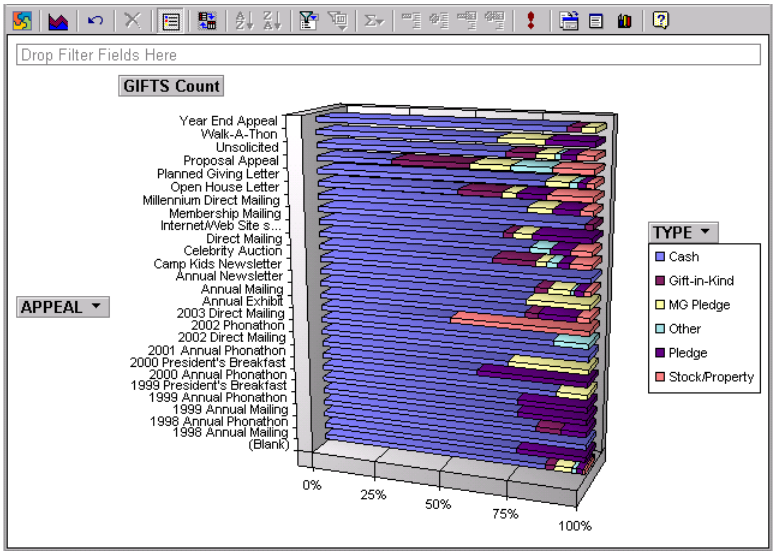
    Data fields provide the values displayed in the chart. When you add a field to the data area, the values for the field are displayed as data markers for the items you selected in the category and series fields.



We recommend you leave the Commands and Options screen open as you work in a chart because the available options on the screen change as you select different items in a chart. To access the screen, right-click anywhere in a chart and select **Commands and Options**.

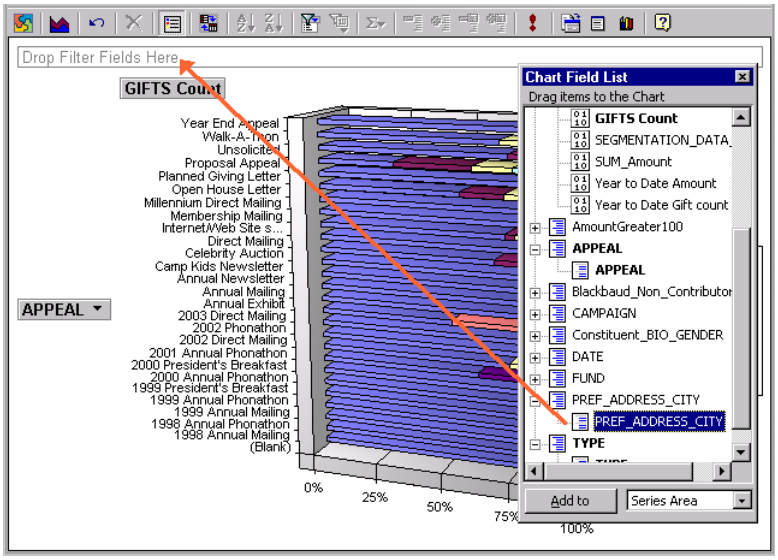
Data fields are identifiable on the Field List screen by the "ones and zeroes" icon beside them.

12. The Chart is now populated with the selected information. You can select the specific type of chart you want to view by right-clicking anywhere in the chart and selecting **Commands and Options**. Select the Type tab, and choose the type of chart you want to display.



Before you publish a Chart, you can hide the toolbar and drop zones by right-clicking and selecting **Commands and Options**. Select the Show/Hide tab and unmark the **Field buttons / drop zones** and **Toolbar** checkboxes. For more information about publishing, see “Publications” on page 123.

13. You want to view the selected data by individual cities. To do this, select **PREF_ADDRESS_CITY** from the Field List and drag it to the Drop Filter Fields Here area.



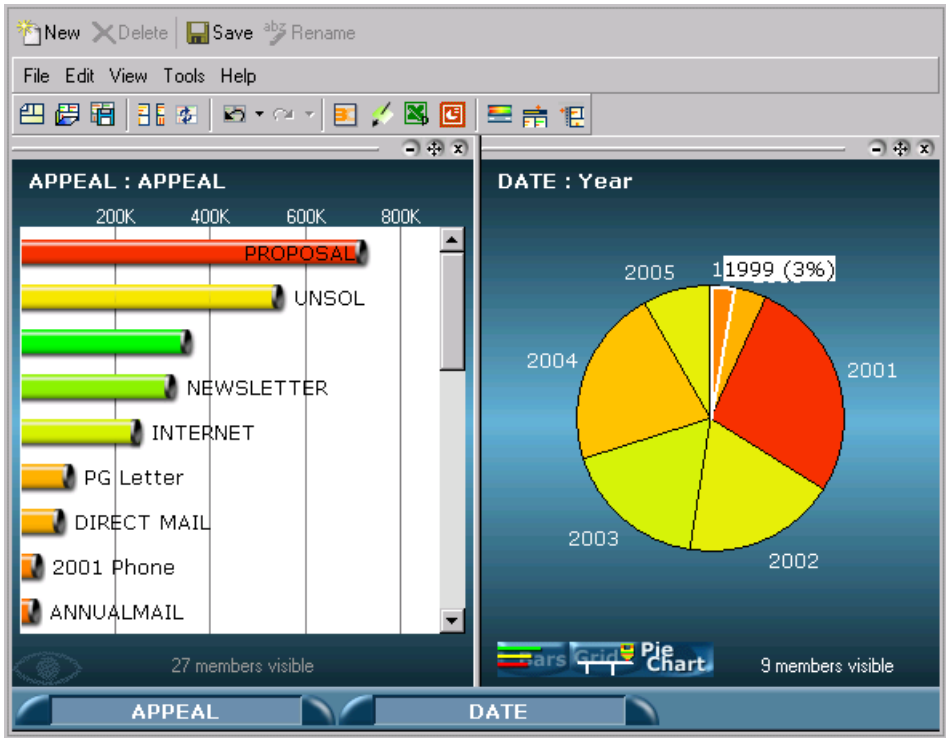
14. You can now click the down arrow beside **PREF_ADDRESS_CITY** and select individual cities for which you want to view the appeal gift information.

15. Click **Save** in the toolbar.

    You can perform a variety of functions with the Chart. For example, from the action bar, you can click **Save to Clipboard** to create an image of the Chart you can paste into an e-mail, presentation, or other file.

16. To exit the Chart, select another item in the tree view.

Data Analyzer Views



When you have *SQL Server Analysis Services*, you can use Data Analyzer as an alternative way to visualize data. Data Analyzer is an advanced analysis application that enables you to graphically investigate the data in your database. Data Analyzer displays multiple dimensions of your data cube in a dynamic, customizable view.

Data Analyzer Views offer a variety of features to help analyze and share your data. For example, from a Data Analyzer View, you can click the **Export to PowerPoint** button in the toolbar to save the view as a *PowerPoint* slide for use in your presentations.

For more information about using Data Analyzer, right-click anywhere in a view and select **Help**.

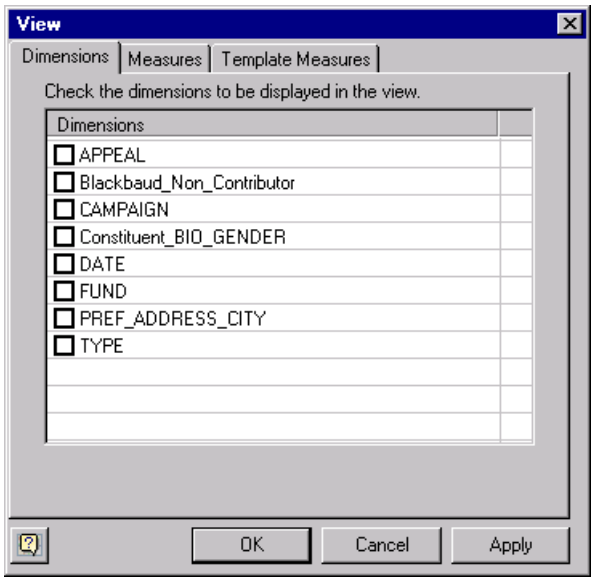
Data Analyzer BusinessCenter

From a Data Analyzer View, you can access the Microsoft Data Analyzer *BusinessCenter* through the **Tools** menu. The *BusinessCenter* provides predefined queries, in a natural-language format, that you can use to answer standard questions about your data. For example, you can use the *BusinessCenter* to answer the question, “How did year-to-date donations compare to the same period last year?” Running this query opens a screen that explains how the results will be shown in the view.

For more information about the Data Analyzer *BusinessCenter*, select **Tools**, **BusinessCenter**. From the *BusinessCenter*, click the question mark at the bottom of the screen.

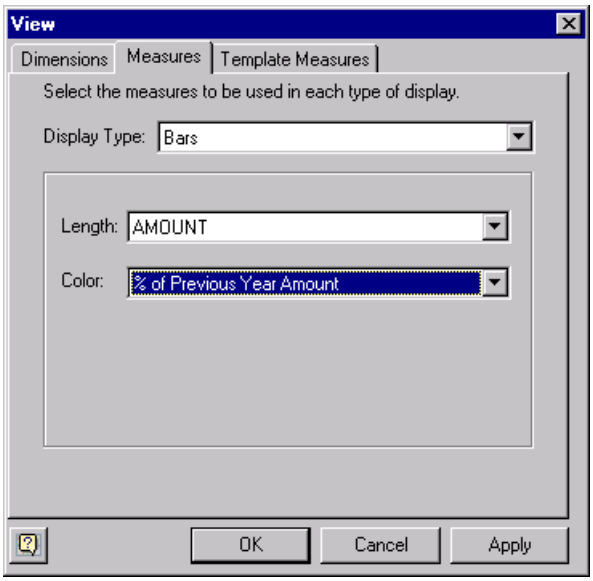
➢ Adding a new Data Analyzer View

1. On the *Analytics* tree view, select the data mart for which you want to create a Data Analyzer View.
2. Click **Reports** in the tree view.
3. Click **New**, **Data Analyzer View** on the action bar. The Report Wizard appears on the General tab.
4. Enter a name for the Data Analyzer View, and optionally, a description.
5. In the **Data Source** field, select the cube on which you want to base the Data Analyzer View.
6. Click **Finish**. The View screen appears open to the Dimensions tab.



7. In the **Dimensions** box, check the dimensions you want to include in the view.

8. Select the Measures tab.

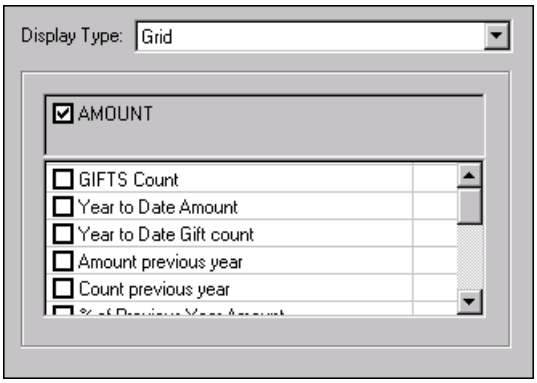


9. Select whether you want to view a **Display Type** of Bars or Grid.

   With bar charts, you can select only two measures, and the **Length** and **Color** of the bars are used to display them. For example, the amount of gifts for a region may be measured by the length of a bar and the total of gifts compared with last year may be measured by color. So the length of a bar may indicate which region produces the most gifts, while the color represents how the region is performing compared to last year.

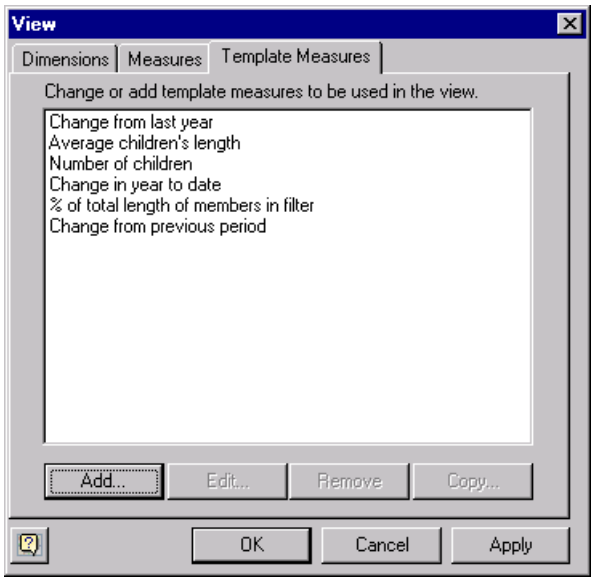
   The color range falls between red and green. By default, red represents values that you might be concerned about, such as high cost, or negative giving growth. Green represents the opposite: low cost or outstanding giving growth. You can change the color defaults once the View appears by clicking the **Color Scale** toolbar button.

   If you select a **Display Type** of Grid, the Analyzer View displays data in tabular format.



When you select Grid, you can choose any number of measures. At least one measure is always selected (at the top of the list). This measure determines the length of the bars when you switch to Bars view (two measures may be locked if you also selected a **Color** in bar view). To remove this measure from the view, select Bars in the **Display Type** field, and enter a measure in the **Length** field that you want to include in the view.

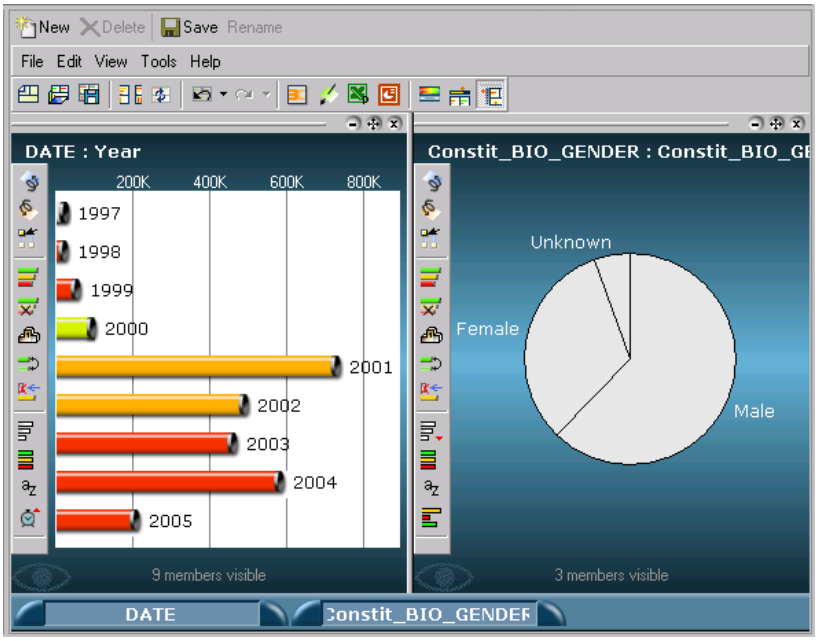
10. Select the Template Measures tab.



In addition to the measures displayed in the lists, you can use the Template Measures tab to create your own measures and include them in the view. When you click **Add**, a Template Measure Editor screen appears on which you can build multi-dimensional expressions to create data calculations.

For more information about the Template Measures tab and the other tabs on the View screen, click the **Help** button on the lower left corner of the screen.

11. Click **OK**. The Data Analyzer View appears.



12. For more information about the toolbars and features available on the View, from the **Help** menu, click **Microsoft Data Analyzer Help**.

You can click the **Export to PowerPoint** button in the toolbar to save the View as a *PowePoint* slide.

Custom Crystal Reports

You can create custom *Crystal Reports* using data from ***The Information Edge*** data mart tables. Additionally, you can import *Crystal Reports* into the program where they can be previewed in ***The Information Edge*** shell.

The Information Edge enables you to use Smart Fields to perform complex calculations rather than specifying formulas in your reports. Because the calculations are performed in the data mart rather than the report, the speed of designing and generating the report is greatly increased.

When you create a custom *Crystal Report* from within ***The Information Edge***, a file is automatically created for the report. When you close the report, you are prompted to import the file into ***The Information Edge***. When a *Crystal Report* is imported into the program, the report is stored in the data mart from which it was created. This enables anyone with access to ***The Information Edge*** to access the report. The report displays live data, it is not a "snapshot" of data.

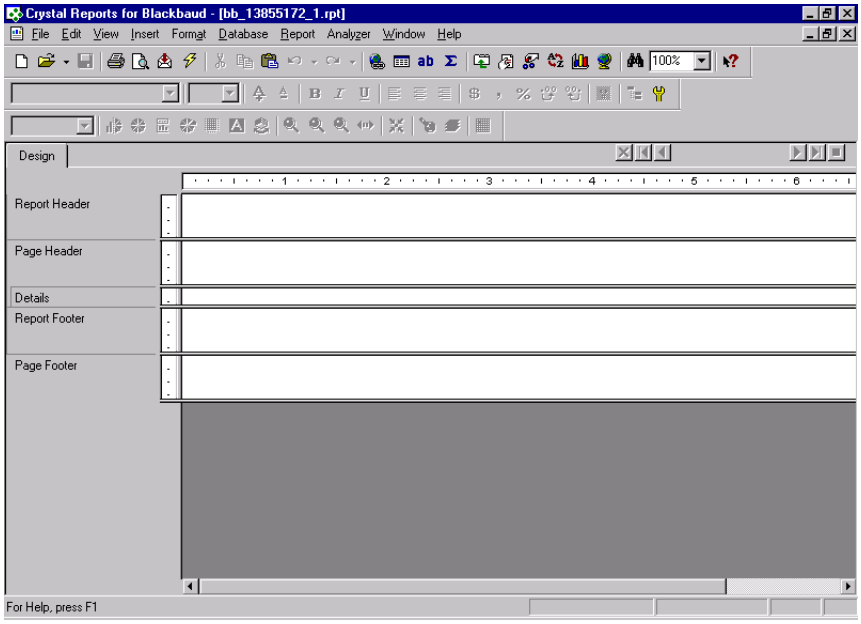
To design reports, you must have *Crystal Reports Professional* 8.5 installed on the client machine from which you are accessing ***The Information Edge***. If *Crystal Reports Professional* 8.5 is not installed, reports can be viewed, but not designed.

If you specify that a data mart containing a *Crystal Report* be processed automatically on a schedule, the user specified in the properties for the MSSQLSERVER service (Local System Account is the default) must have a printer installed.

➢ Creating a custom Crystal Report

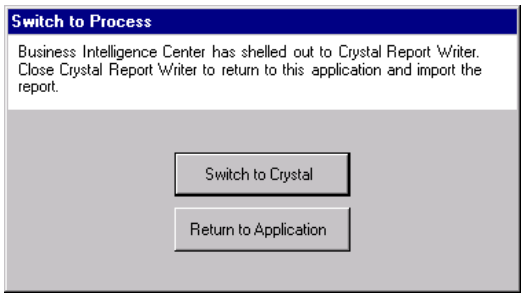
1. From the *Analytics* tree view, select the data mart containing the data you want to include in a custom *Crystal Report*.
2. Select **Reports** in the tree view and click **New**, **Crystal Report** on the action bar. The Report Wizard opens to the General tab.

3. Enter a **Name** and optionally a **Description** for the report and click **OK**. The *Crystal Reports* program opens to the Design screen.



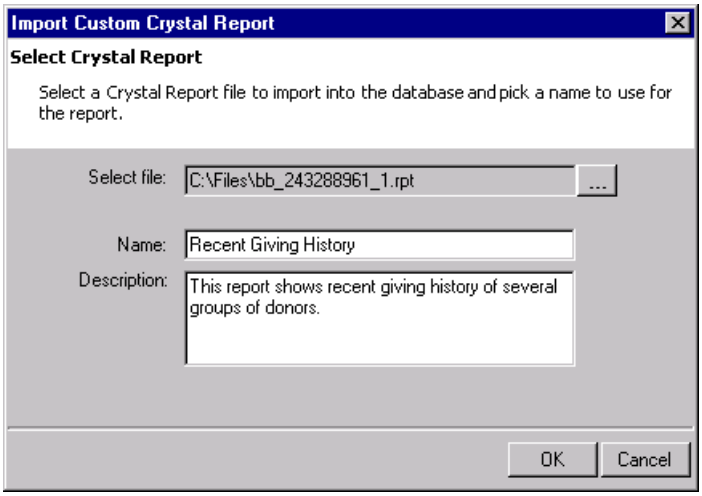
The data tables from the selected data mart are available for use in the report. Use the data to create the report as you would any *Crystal Report*. For more information about creating *Crystal Reports*, see your *Crystal Reports* documentation.

4. Save the report. If you try to access ***The Information Edge*** before closing *Crystal Reports*, the Switch to Process screen appears.


Switch to Process
Business Intelligence Center has shelled out to Crystal Report Writer. Close Crystal Report Writer to return to this application and import the report.
Switch to Crystal
Return to Application

5. Click **Switch to Crystal**, and close *Crystal Reports*. If you click **Return to Application**, your report is not imported into ***The Information Edge*** at this time. You can manually import the report later.

6. After closing *Crystal Reports*, you return to the console, and the Import Custom Crystal Report screen appears.

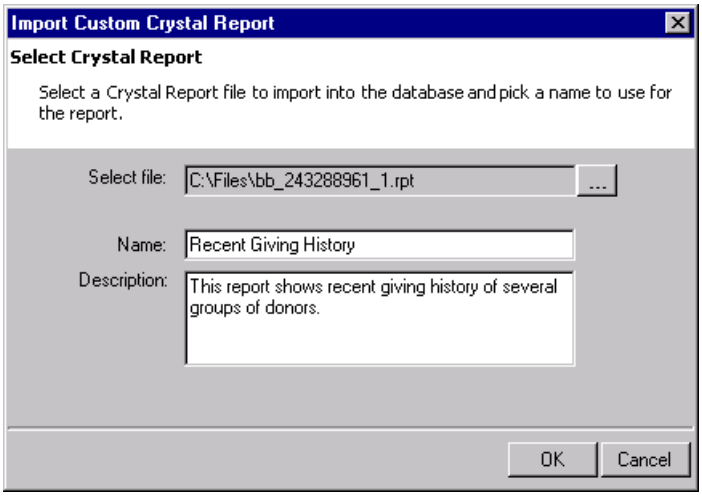

Import Custom Crystal Report
Select Crystal Report
Select a Crystal Report file to import into the database and pick a name to use for the report.
Select file:
C:\Files\bb_243288961_1.rpt
...
Name:
Recent Giving History
Description:
This report shows recent giving history of several groups of donors.
OK
Cancel

7. The new report automatically appears in the **Select file** field.
8. Enter a **Name** and **Description** for the report. This information will help you identify the report in ***The Information Edge***.
9. Click **OK**.

   You return to the console where the new report appears on the Custom Crystal Reports page. You can open the report in *Crystal Reports* from this page or view the report designer in ***The Information Edge*** shell.

➢ Importing a custom Crystal Report

1. From the *Analytics* tree view, select the data mart containing the data you want to include in a custom *Crystal Report*.
2. Select **Reports** in the tree view and click **New**, **Import Crystal Report** on the action bar. The Import Custom Crystal Report screen appears.


Import Custom Crystal Report
Select Crystal Report
Select a Crystal Report file to import into the database and pick a name to use for the report.
Select file:
C:\Files\bb_243288961_1.rpt
...
Name:
Recent Giving History
Description:
This report shows recent giving history of several groups of donors.
OK
Cancel

3. Browse to the location of the *Crystal Report* you want to import and select it. The report file appears in the **Select file** field.

4. Enter a **Name** and **Description** for the report. This information will help you identify the report in ***The Information Edge***.
5. Click **OK**.

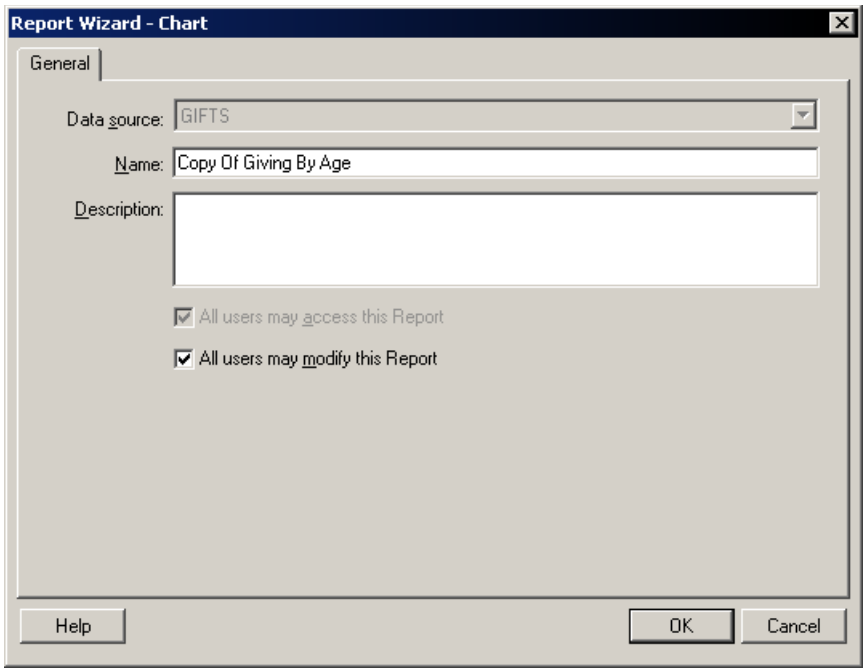
   You return to the console where the new report appears on the Custom Crystal Reports page. You can open the report in *Crystal Reports* from this page or view the report designer in ***The Information Edge*** shell.

Copying Reports

Sometimes you may want to use an existing report as the basis for a new one. In this case, you can create a duplicate of the original report.

➢ **Copying a report**

1. From the navigation bar, select **Analytics**. The Analytics page appears.
2. Select the report you want to copy and click **Copy** in the action bar. The Report Wizard General tab appears.



3. The **Name** defaults to <Copy of {selected report}>.

   The **Description** defaults to that of the original report on which the copy is based. The description is not required, but can help identify the report in the tree view.
4. Specify whether you want other users to be able to view and edit the report. If you do not mark either checkbox, only you will be able to view it.
5. Click **OK**. You return to the Analytics main page where the new report now appears in the content window on the right.

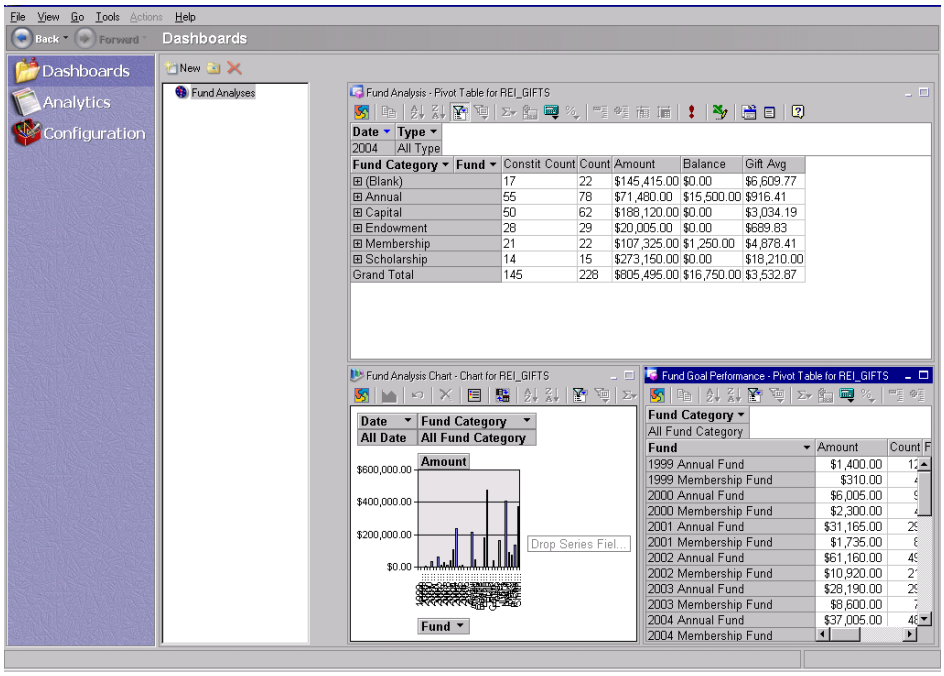
Deleting and Moving Reports

An administrator can delete any user-created report. If it is viewable by others, the report is removed from all views and dashboards.

You can move the location of a report to another folder. If you move a report that is viewable by others into a folder that is not, the report is removed from any other users' views and dashboards.

Dashboards

Dashboards enable you to view specific reports simultaneously.



When you select **Dashboards** in the navigation bar, the Dashboard page appears listing any dashboards you have created. In *Analytics*, you can add reports to your dashboards.

When you view items in a dashboard, they can be maximized, minimized, or viewed simultaneously with other dashboard items.

➢ Creating a Dashboard and adding items to it

1. Select **Dashboards** in the navigation bar. The Dashboards page appears.
2. Click **New** in the action bar and provide a **Name** and **Description**.

3. When you create the new dashboard, it initially has no content. You can add content selecting a report in the *Analytics* tree view and clicking **Add to Dashboard** in the action bar.

4. Then you specify the dashboard on which you want to include the item. When you return to the dashboard, the newly selected report now appears on it.

➢ **Renaming a Dashboard**

1. Select **Dashboards** in the navigation bar. The Dashboards page appears.
2. Right-click on the Dashboard you want to rename and select **Open**. The Properties screen appears.
3. Change the **Name** or **Description**.
4. Click **OK**. You return to the Dashboards page where the new name appears.

Marketing Segmentation

Chapter 5

Contents

Navigating in Segmentation **173**
Creating Segmentations **174**
Generating Segments 178
Packages 183
Filtering Segmentations 184
Budget/Expenses. 185
Properties 186
Test Segments and Test Segmentations **188**
Custom Properties **191**
Activating Segmentations. **193**
Exporting Segmentations **194**
Importing Segmentations Into The Raiser's Edge 196
Notes About Importing Appeal Comments. 198
Analyzing Segmentations **198**
Lift Charts. 199
Cumulative Response 199
Response % By Segment 199
Amount Raised By Segment. 200
Test Segment Performance 200

Procedures

Adding a segmentation 174
Completing the Segmentation General tab 174
Generating segments by selection 179
Generating segments by field 180
Adding or editing individual segments. 182
Completing the Segmentation Filter tab 184
Completing the Segmentation Budget/Expenses tab 186
Completing the Segmentation Packages tab. 183
Completing the Segmentation Properties tab 187
Adding a test segment. 189

Adding a test segmentation 190
Creating custom properties 192
Activating a segmentation 193
Exporting a segmentation 195
Exporting the segmentation grid 196
Importing segmentation data into The Raiser's Edge with the segmentation plug-in 196
Analyzing an individual segmentation 200
Analyzing all segmentations 201

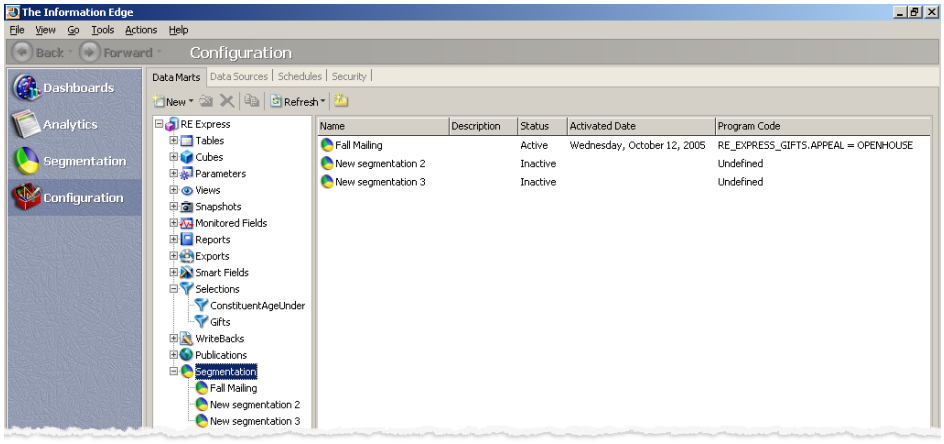
The optional module *Marketing Segmentation* enables you to use segmentation to group donors on the basis of a wide variety of different characteristics, such as recent giving history and wealth. Segmentation helps the effectiveness of your fundraising by enabling you to target your best prospects with customized mailings. Most organizations have finite resources that may be directed toward appeal mailing efforts. Segmentation can help you determine where you can generate the greatest return on your investment.

The main reason to use segmentation is that different groups of donors will have different responses to appeal mailings. Targeting specific groups enables you to increase the effectiveness of your mailings. You can specify different packages (mailings) and apply them to particular segments within a segmentation. Once you create a segmentation, you must then activate it by specifying a way to distinguish donations made as a result of the segmentation from all other donations received by your organization. For more information, see “Activating Segmentations” on page 193.

You may want to base segmentations on previous marketing campaigns, statistical scoring (such as recency, frequency, monetary values), or biographical traits (such as age or gender). You can specify fixed costs, such as processing by a mailing house, in the segmentation; additionally, you can specify variable costs such as cost per piece. A variety of features are available in ***The Information Edge*** to help you analyze the success of your individual segmentations, including Lift Charts, Cumulative Response Charts, and Response Percent by Segment Charts. Additionally, when you create segmentations, a cube called “Segmentation Data” is automatically created so you can use the analytical tools in ***The Information Edge*** to compare and contrast information from all your segmentations. For more information, see “Analyzing Segmentations” on page 198.

Navigating in Segmentation

When you select **Segmentation** in the navigation bar, the Segmentation page appears.



From the Segmentation page, you can access all items related to your segmentations, including creating new ones, and editing and viewing existing ones.

Creating Segmentations

Segmentations target your mailings. A segmentation is based on a selection or field value in ***The Information Edge***. For example, if you have an RFM smart field to score recency, frequency, and monetary value of gifts for your donors, you can create different segments for each of these groups.

Additionally, you can create different packages for the individual segments in a segmentation. Segment packages are the mailings you send to your donors. For example, your year end mailing may consist of several different pieces, each targeted to a different group. You may have a glossy calendar for your best donors, a post card for your lowest donors, and several pieces in between. You can also track budget amounts versus actual costs for the segmentation, and view the members of each individual segment within the segmentation.

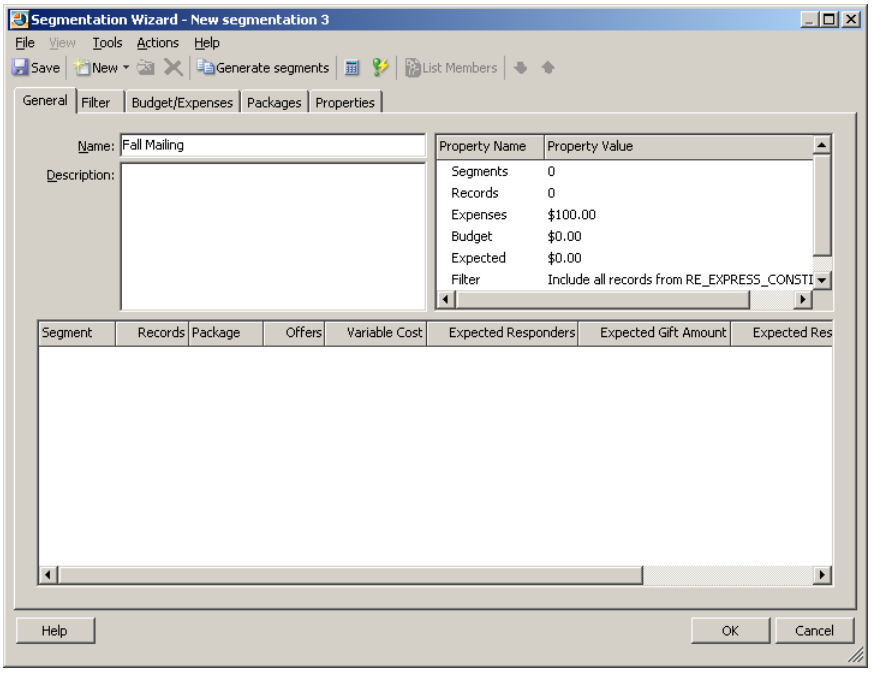
➢ Adding a segmentation

1. On the tree view, under the data mart for which you want to create a segmentation, right-click **Segmentation**, **New**. The Segmentation Wizard appears opens to the General tab.
2. On the General tab, you specify information such as the name of the segmentation, and create the items that will make up the segmentation, including segments, packages, and more. For more information, see “Completing the Segmentation General tab” on page 174.
3. On the Filter tab, specify which records will be included in your segmentation. For more information, see “Completing the Segmentation Filter tab” on page 184.
4. On the Budget/Expenses tab, you can enter the amount you have budgeted for a segmentation so you can view at a glance whether or not it has exceeded the budget. For more information, see “Completing the Segmentation Budget/Expenses tab” on page 186.
5. On the Packages tab, you can specify the mailings that are available for a segmentation. For more information, see “Completing the Segmentation Packages tab” on page 183.
6. On the Properties tab, you can specify that custom properties you created previously, such as whether a reply envelope is included with a mailing, be applied to the current segmentation. For more information, see “Completing the Segmentation Properties tab” on page 187.
7. Click **OK** to save the segmentation. You return to the Segmentation page.

➢ Completing the Segmentation General tab

1. From the tree view, select a data mart from which you want to create the mailing segmentation.

2. From the tree view, click **Segmentation**. On the Action bar, click **New**. The Segmentation Wizard appears, open to the General tab.


Segmentation Wizard - New segmentation 3
File View Tools Actions Help
Save New Generate segments List Members
General Filter Budget/Expenses Packages Properties
Name: Fall Mailing
Description:
Property Name Property Value
Segments 0
Records 0
Expenses $100.00
Budget $0.00
Expected $0.00
Filter Include all records from RE_EXPRESS_CONSTI
Segment Records Package Offers Variable Cost Expected Responders Expected Gift Amount Expected Res
Help OK Cancel

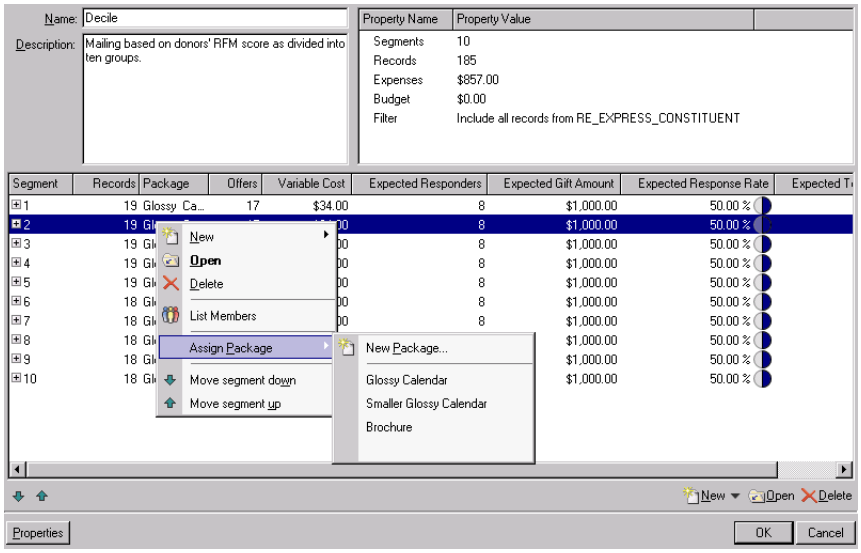
On the Segmentation Wizard, you can specify all the settings for the segmentation.

3. Enter a **Name** and **Description** for the segmentation. For example, you may be creating a segmentation based on “RFM Scores” with description of “Groups donors based on breakdown of RFM scores.” Segmentation names must be unique - even segmentations in different data marts cannot share the same name.

4. You can **Generate Segments** based on Selections or Fields. For more information, see “Generating Segments” on page 178.

The **Records** column displays the number of records in a segment and the **Offers** column displays the number of mailing pieces for the segment. The **Offers** column is broken down by test segment, so adding the offers for a segment and its test segment equals the number of records for the segment.

5. After you generate segments, the Segmentation Wizard General tab is populated with the segment information.



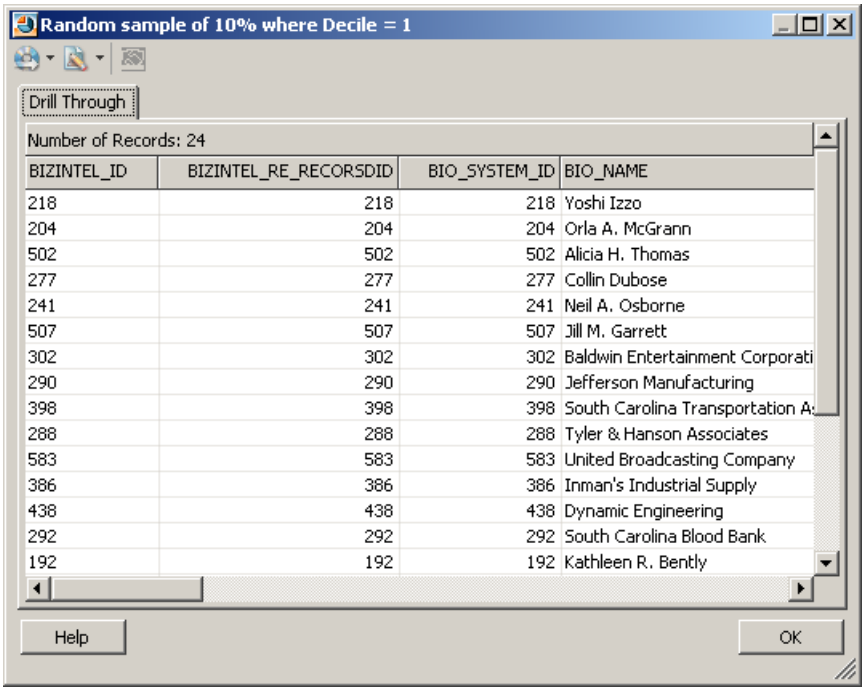
The default package specified when you generated segments is associated with each segment. To assign another package, right-click on a segment and select **Assign Package**. Select the package that you want to assign to the specified segment. For information about creating packages, see “Packages” on page 183.

You can also edit existing segments or create individual ones by right-clicking in the grid. For more information, see “Adding or editing individual segments” on page 182.

6. The frame on the upper right of the General tab displays information about the segmentation. The Budget entry is currently blank. On the Budget/Expenses tab you can enter the amount you have budgeted for this segmentation so you can view at a glance whether or not it has exceeded the budget. For more information, see “Completing the Segmentation Budget/Expenses tab” on page 186.

7. On the General tab, you can view any test segments you created by clicking the plus sign beside the parent segment (if a segment has no test segments, the plus sign is not available).

8. To view the records included in a segment and any test segments beneath it, click **List Members** in the action bar. A list screen appears.


Random sample of 10% where Decile = 1
Drill Through
Number of Records: 24
BIZINTEL_ID
BIZINTEL_RE_RECORSDID
BIO_SYSTEM_ID
BIO_NAME
218 218 218 Yoshi Izzo
204 204 204 Orla A. McGrann
502 502 502 Alicia H. Thomas
277 277 277 Collin Dubose
241 241 241 Neil A. Osborne
507 507 507 Jill M. Garrett
302 302 302 Baldwin Entertainment Corporati
290 290 290 Jefferson Manufacturing
398 398 398 South Carolina Transportation A
288 288 288 Tyler & Hanson Associates
583 583 583 United Broadcasting Company
386 386 386 Inman's Industrial Supply
438 438 438 Dynamic Engineering
292 292 292 South Carolina Blood Bank
192 192 192 Kathleen R. Bently
Help
OK

9. You can drill through to individual records or create a WriteBack from the list.
10. When you click **Export**, you export the records included in this segment from this screen. For more information about exporting, see "Exporting Segmentations" on page 194.
11. Click **OK** to return to the Segmentation Wizard.
12. You can view and edit properties for individual segments within the segmentation. Double-click a segment. The Segment Wizard appears.

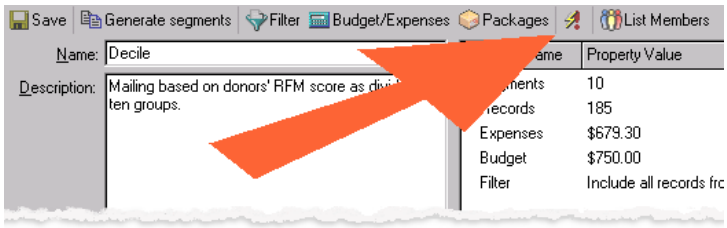
    On this screen, you can edit the properties established on the Create Segments screen for only the selected segment. Changes you make here do not affect the rest of the segments.
13. Click **OK** to return to the Segmentation Wizard.
14. You can rearrange the order of the segments using the up and down arrows in the toolbar on the General tab. The order of segments is important because records can only be in one segment, and criteria is processed from top to bottom. So, a person can be in a segment of "City = Los Angeles" or "State = California," but not in both. Which segment they are part of depends on how the segments are ordered.

When viewing test segment records, a random sample appears, so the same records do not always appear in the view. The same is true when viewing a segment with a fixed number of records or if the segment sample size is less than 100 percent. The records are not actually determined until the segmentation is activated.

You can right-click on the grid to add a test segment.

The order of segments is important because records can be included in only one segment. Segments are processed in order from top to bottom. If a record meets the criteria for more than one segment, the first of those segments that is processed will include the record.

Each time you rearrange the order, the entire segmentation recalculates. Depending on the fields and filters used in the segmentation and the amount of data it contains, this may take some time. You can turn automatic recalculating off by selecting **Tools**, **Use manual calculation** from the menu bar. When you do this, the segments are not recalculated when you move them. After you finish rearranging the segments, you can recalculate them by clicking the recalculate toolbar button.



15. When you have completed working on the segmentation, click **Save** in the toolbar. From the **File** menu, select **Close**. You return to the Segmentation page where the new segmentation now appears.

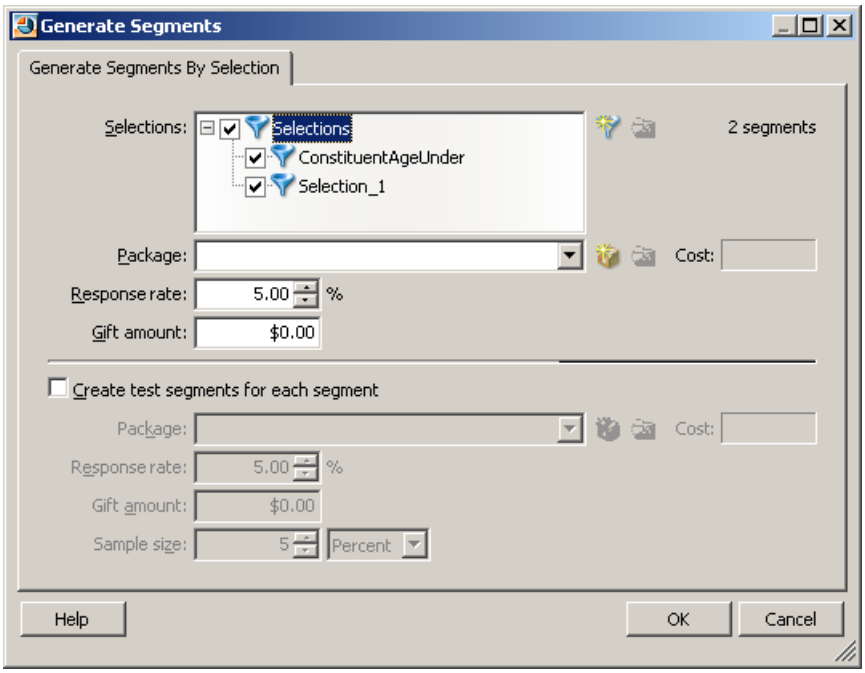
    To enable analyzing the success of a segmentation, you must activate it. For more information, see “Activating a segmentation” on page 193.

Generating Segments

Segments group donors on the basis of a wide variety of different characteristics, enabling you to target your prospects with customized mailings based on these characteristics. Segments can be based on either selections or field values. After generating, you can edit existing segments or create additional ones.

➢ Generating segments by selection

1. From the Segmentation Wizard General tab action bar, click the arrow by **Generate Segments** and click **By Selections**. The Generate Segments screen appears.



2. If you mark the **Selections** checkbox, a segment is generated for each selection you have previously created. If you want to create segments for only certain selections, unmark the **Selections** checkbox and mark the individual selections. You can also click the "filter" icon and create a new selection.
3. Packages are the mailings available for a segmentation. If you want to assign a default package for all segments in the segmentation, enter the package in the **Package** field. You do not have to specify a default package, but if you do it is only a default. You can specify other packages for specific segments after you generate the segments. For information about adding packages, see "Packages" on page 183.
4. You can enter an expected **Response rate** to your mailing. You can also specify the expected **Gift amount** from respondents. Entering this information enables you to compare the expected versus actual response rate when you analyze the segmentation later.

You can also add new packages on the Packages tab.

5. To enable test segments, mark the **Create test segments for each segment** checkbox. If you mark the checkbox, you can specify settings for test segments as subsets of your main segments. It is important to understand the difference between test segments and test segmentations.

   A test segment is useful if you have a new package or appeal you are introducing. When creating test segments here, you are sending the test out with the main mailing all at the same time. If the test segment is successful, in a future mailing you may want to switch from the old package to the new package.

Test segmentations can be created by copying a percentage of an existing segmentation. You can then send a mailing to only that percentage to test its success. For more information, see “Test Segments and Test Segmentations” on page 188.

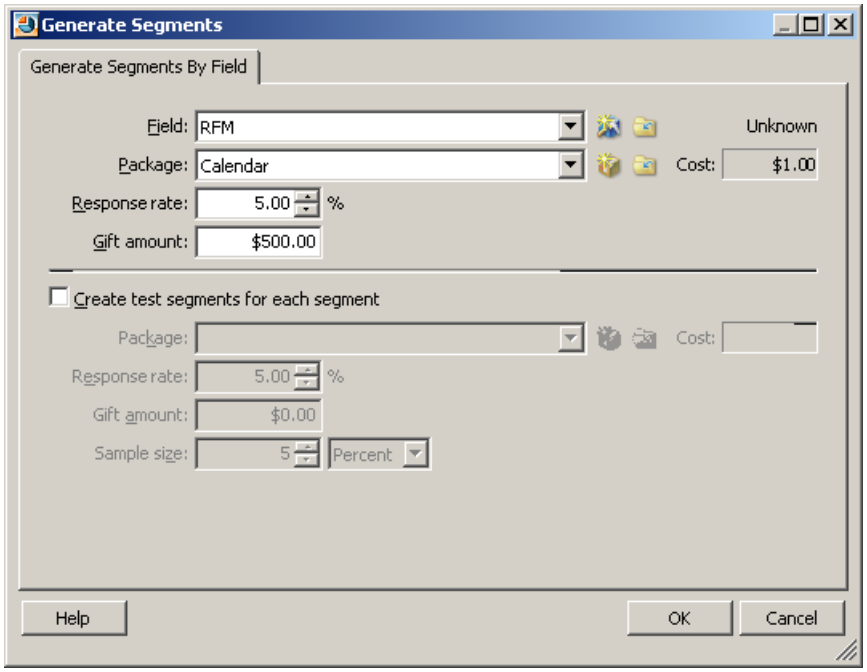
6. In the **Sample size** field, enter a number and specify whether the number represents **Percent** or **Records**. For example, if you enter “50” and mark **Percent**, the test segment will include a random sampling of records equal to fifty percent of the total records in the segment. If you enter “50” and mark **Records**, fifty randomly sampled records will be included in the test segment.

   The Sample size is typically 100 percent. However, it may be less if the segment belongs to a test segmentation. For more information about test segmentations, see “Test Segments and Test Segmentations” on page 188. Additionally, you may want to manually adjust the sample size to ensure segments are equally sized, to hold down costs, or to account for limits on mailing materials.

7. Specify a default **Package** for the test segments.
8. You can enter an expected **Response rate** for your test segment and specify the expected **Gift amount** from respondents in the test segment.
9. Click **OK** to return to the Segmentation Wizard General tab.

➢ Generating segments by field

1. From the Segmentation Wizard General tab action bar, click the arrow by **Generate Segments** and click **By Field**. The Generate Segments screen appears.



2. Choose the **Field** containing the values on which the segmentation will be based. You can also click the icon and create a new smart field.

3. Packages are the mailings available for a segmentation. If you want to assign a default package for all segments in the segmentation, enter the package in the **Package** field. You do not have to specify a default package, but if you do it is only a default. You can specify other packages for specific segments after you generate the segments. For information about adding packages, see "Packages" on page 183.
4. You can enter an expected **Response rate** to your mailing. You can also specify the expected **Gift amount** from respondents. Entering this information enables you to compare the expected versus actual response rate when you analyze the segmentation later.
5. To enable test segments, mark the **Create test segments for each segment** checkbox. If you mark the checkbox, you can specify settings for test segments as subsets of your main segments. It is important to understand the difference between test segments and test segmentations.

   A test segment is useful if you have a new package or appeal you are introducing. When creating test segments here, you are sending the test out with the main mailing all at the same time. If the test segment is successful, in a future mailing you may want to switch from the old package to the new package.

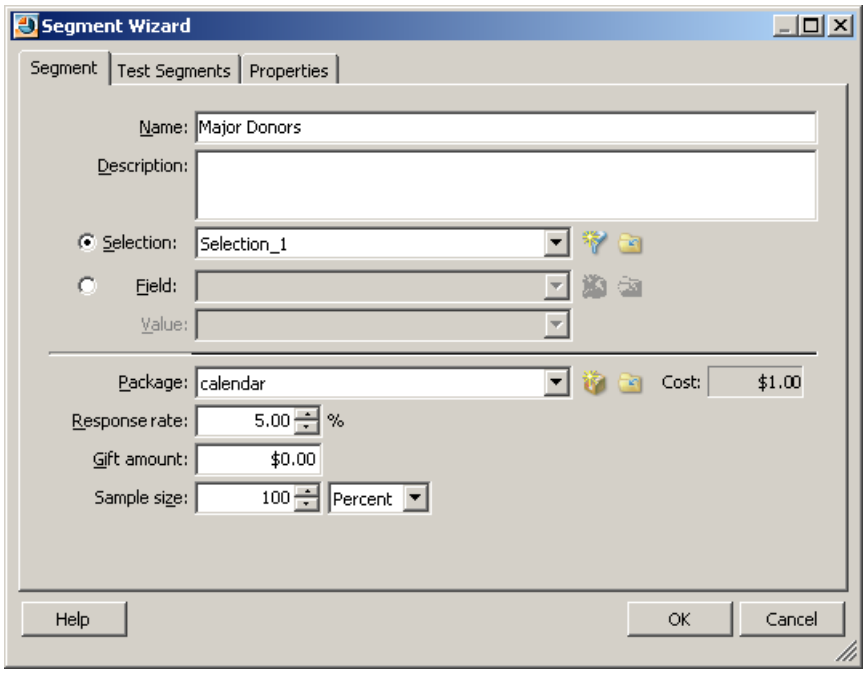
   Test segmentations can be created by copying a percentage of an existing segmentation. You can then send a mailing to only that percentage to test its success. For more information, see "Test Segments and Test Segmentations" on page 188.
6. In the **Sample size** field, enter a number and specify whether the number represents **Percent** or **Records**. For example, if you enter "50" and mark **Percent**, the test segment will include a random sampling of records equal to fifty percent of the total records in the segment. If you enter "50" and mark **Records**, fifty randomly sampled records will be included in the test segment.

   The Sample size is typically 100 percent. However, it may be less if the segment belongs to a test segmentation. For more information about test segmentations, see "Test Segments and Test Segmentations" on page 188. Additionally, you may want to manually adjust the sample size to ensure segments are equally sized, to hold down costs, or to account for limits on mailing materials.
7. Specify a default **Package** for the test segments.
8. You can enter an expected **Response rate** for your test segment and specify the expected **Gift amount** from respondents in the test segment.
9. Click **OK** to return to the Segmentation Wizard General tab.

You can also add new packages on the Packages tab.

➢ Adding or editing individual segments

1. From the segmentation General tab, right-click on an existing segment and select **Open** or to create a new segment, right-click and select **New**, **Segment**. The Segment Wizard appears on the Segment tab.



2. Enter a **Name** and **Description** for the segment.
3. Specify whether you want the segment to consist of records included in a **Selection** or with a specific value from a **Field**. If you select **Field**, you must enter the **Value** that records must have to be included in the segment. If necessary, you can click the icon beside the field to create a new selection or smart field.
4. Packages are the mailings available for a segmentation. Enter the mailing for this segment in the **Package** field. If necessary you can edit an existing package or add a new one by clicking the icon beside the field. For more information about adding packages, see “Packages” on page 183.
5. You can enter an expected **Response rate** for the segment. You can also specify the expected **Gift amount** from respondents. Entering this information enables you to compare the expected versus actual response rate when you analyze the segmentation later.
6. In the **Sample size** field, enter a number and specify whether the number represents **Percent** or **Records**.

   The Sample size is typically 100 percent for a segment. However, it may be less if the segment belongs to a test segmentation. For more information about test segmentations, see “Test Segments and Test Segmentations” on page 188. Additionally, you may want to manually adjust the sample size to ensure segments are equally sized, to hold down costs, or to account for limits on mailing materials.
7. Click **OK** to save your changes and return to the Segmentation Wizard.

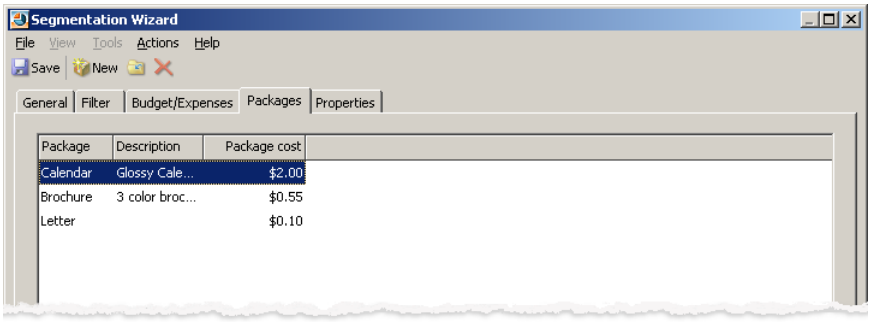
Packages

Packages are the mailings available for a segmentation. For example, you may have a package named “Glossy Calendar” that is sent to your best donors and prospects. You could also have a Glossy Brochure, Standard Brochure, and Post Card.

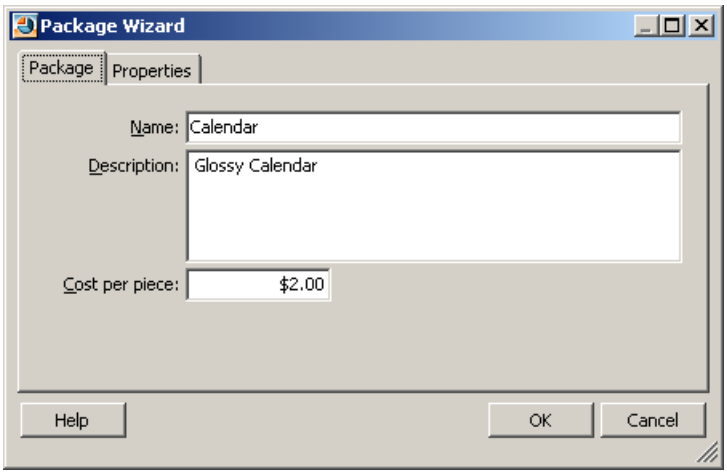
After you create packages, you can specify that one of them be the default when generating segments. Then after segments are generated, you can assign the other packages you created to the segments.

➢ Completing the Segmentation Packages tab

1. When creating or editing a Segmentation, select the Packages tab.



2. To add a package for the current segmentation, click New in the action bar. The Package Wizard appears.



3. Enter a **Name** and **Description** for the package. For example, you may have a package named “Glossy Calendar” that is sent to your best donors and prospects.
4. Enter the **Cost per piece** of the mailing.
5. On the Properties tab, you can assign any properties you previously created to the package. For more information about Properties, see “Custom Properties” on page 191.

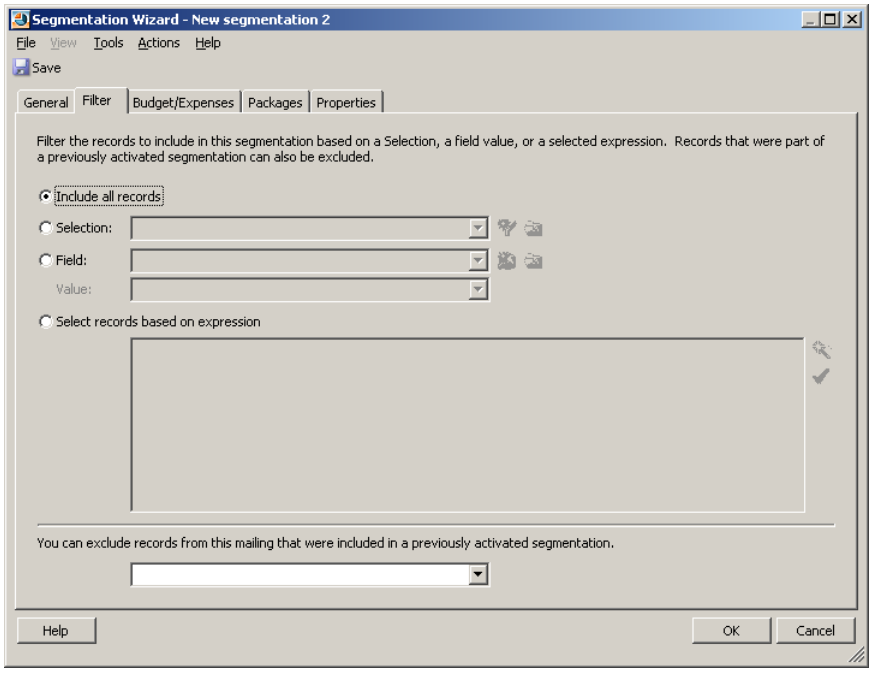
6. Click **OK** to save the package and return to the Segmentation Wizard. When you generate segments on the General tab, you can select a package as the default. Then, after segments are generated, you can assign the packages you created here to your segments.

Filtering Segmentations

You can filter records in segmentations by specifying to include only records that are part of a selection or that have certain field values. You can also specify to exclude any records in a previously activated segmentation. Filtering by another segmentation is useful if you sent mailings to test segmentation members to gauge the mailings' success, and now want to send mailings to everyone else in the segmentation. By filtering through the test segmentation, you ensure that members in the test do not receive the mailing twice.

➢ Completing the Segmentation Filter tab

1. When creating or editing a Segmentation, select the Filter tab.


Segmentation Wizard - New segmentation 2
File View Tools Actions Help
Save
General Filter Budget/Expenses Packages Properties
Filter the records to include in this segmentation based on a Selection, a field value, or a selected expression. Records that were part of a previously activated segmentation can also be excluded.
Include all records
Selection:
Field:
Value:
Select records based on expression
You can exclude records from this mailing that were included in a previously activated segmentation.
Help
OK
Cancel

2. On this tab, you select the first level of filtering - these are the records you want to include in the segmentation. If you want to **Include all records**, mark that option.
3. If you want to include only those records that are part of a selection, mark **Selection**. All previously created Selections are included in the dropdown. You can also create a new Selection or edit an existing one by clicking the buttons to the right of the dropdown. Only records that meet the selection criteria are included in the segmentation. For more information about Selections, see "Selections" on page 111.

4. If you want to include only those records with a specific field value, mark **Field**. Only fields with values stored in the Constituents table are available in the dropdown. Select a field and specify the **Value** of that field on which you want to filter. Only records with this value are included in the segmentation.
5. Mark the **Select records based on expression** option if you want to use a SQL expression to filter records. Right-clicking in the box shows the available **Tables** (those containing the known constituent ID). You can then select fields from a table. You can also enter text directly in the box.

   You can also use the **Expression** wizard to create your SQL expression. To access the wizard, click the button on the top right of the box.

   a. On the Select Field screen, select the field for which you want to create an expression. All fields in the selected table (including any other smart fields you have already created) are available.

   b. Click **Next**. The Select Condition screen appears. Select a **Condition** and specify the **Values** for that condition. The available values vary depending on the selected condition.

   c. Click **Finish**. You return to the Segmentation Filter screen where your expression appears in the box. Only records meeting the criteria of your expression will be included in the segmentation.

   You can click the **Validate the Expression** button to ensure your expression is a valid SQL statement.
6. To exclude any records that are included in another segmentation, select a previously activated segmentation from the dropdown at the bottom of the tab. Records included in the previous segmentation will not be included in the current one.
7. Click **OK** to save your settings.

   To enable analyzing the success of a segmentation, you must activate it. For more information, see “Activating a segmentation” on page 193.

The filters you apply can affect the speed with which you can rearrange segments. For more information, see “Adding a segmentation” on page 174.

Budget/Expenses

You can enter the amount you have budgeted for a segmentation so you can view at a glance whether or not it has exceeded the budget.

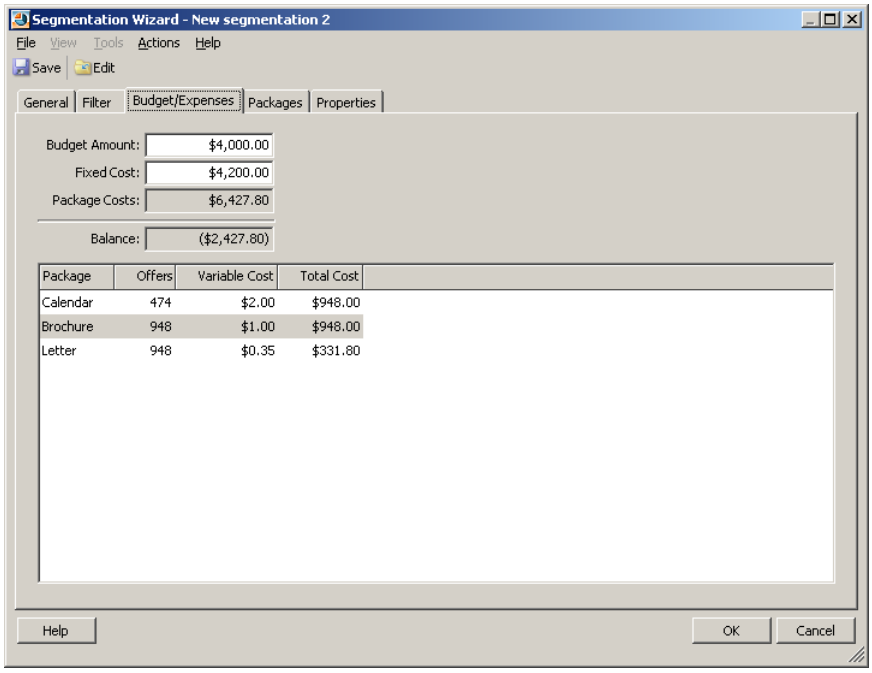
If enough money is not budgeted to mail to all members of a segment, that row is highlighted in red on the General tab grid. You can address this in several ways.

- Increase the budget amount, although this may not always be possible.
- Change the filters for the segmentation. You can specify a field value as criteria for your mailing. The segmentation will then include only those members who have that specific value. You can also choose to exclude members of a previously activated segmentation. For example, you can reduce costs by excluding people from your Summer Appeal if they were included in the Spring Appeal. For more information, see “Analyzing Segmentations” on page 198.
- Change the packages. Some packages may be more expensive than others. You can bring costs under control by using a less expensive package for a segment or segments.

- Decrease the number of offers per segment. You can do this by editing the segment and adjusting the sample size. Reducing the sample size reduces the total number of offers, which decreases the overall variable cost for the segment.
- Remove segments entirely. You can exclude entire segments and mail to them at a later date when funds become available.

➢ Completing the Segmentation Budget/Expenses tab

1. When creating or editing a Segmentation, select the Budget/Expenses tab.



2. Enter the **Budget Amount** you have allotted for this segmentation. If the segmentation has a total cost, for example the cost of sending it to a mailing or fulfillment house, enter the amount in the **Fixed Cost** field.

   The **Package Costs** field automatically includes costs for packages currently in use (you may have some packages that are not currently being used).

   The **Balance** amount automatically includes segmentation and package costs.

3. Click **OK** to save your changes.

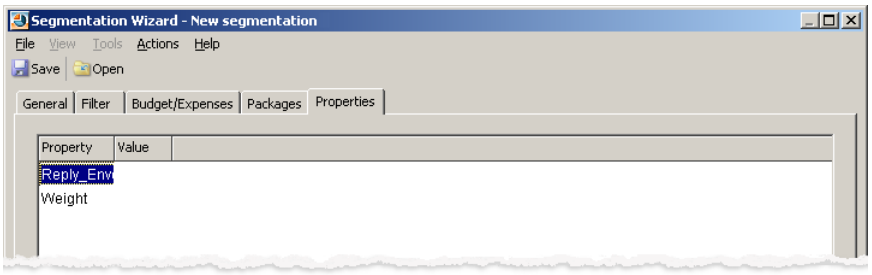
Properties

On the Segmentation Wizard Properties tab, you can specify that custom properties you created previously be applied to the current segmentation. You must create properties from the **Tools** menu before you can apply them here. For more information about creating custom properties, see “Custom Properties” on page 191.

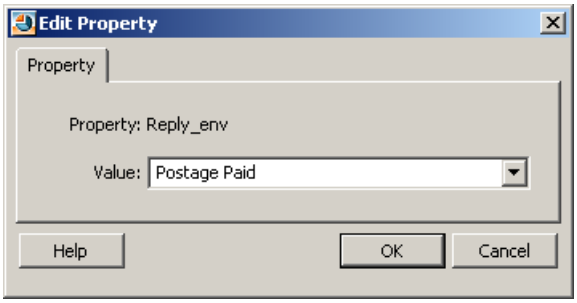
➢ Completing the Segmentation Properties tab

You can apply previously created Custom Properties to segmentations, segments, test segments, and packages. The method of applying them is similar, but accessing Properties differs slightly for each item. The following procedure shows how to add Properties to a segmentation.

1. When creating or editing a Segmentation, select the Properties tab.

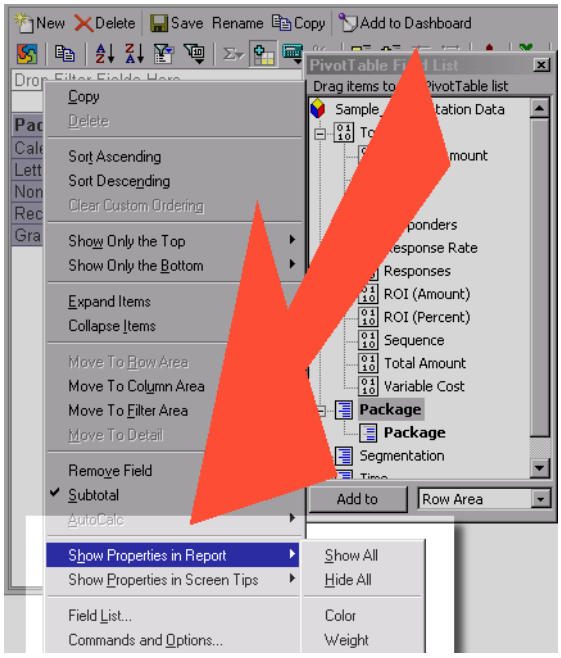


2. Select a property you want to associate with the segmentation and click **Open**. The Edit Property screen appears.



3. Enter a **Value** for the property. You can enter a new value, or click the drop-down to select any entry you have previously created for that property.
4. Click **OK** to save your changes.
5. To view your defined properties in a Pivot Table or Chart, create and activate a segmentation for which you specified a property. Then, create a Pivot Table or Chart, and from the **Field Options** list drag **Segmentation** into a drop zone. If you added properties to a package, you can drag **Packages**.

To view the properties, right-click on the **Segmentation** or **Package** in the drop zone and select **Show Properties In Report**.



6. Select the property you want to display. It then appears in the Pivot Table or Chart.
7. Click **OK** to save your selections and return to the Segmentation Wizard.

Test Segments and Test Segmentations

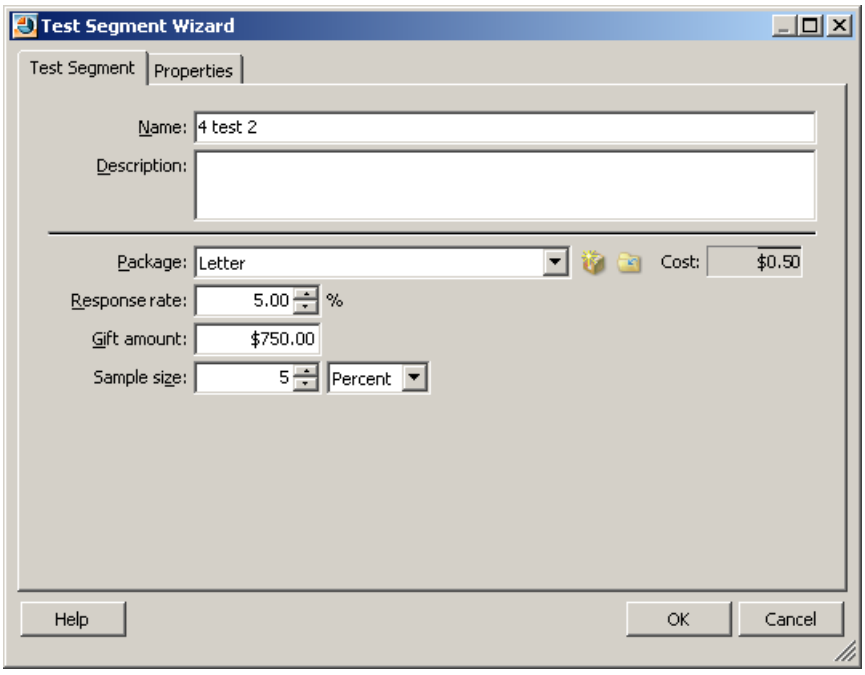
A test segment is useful if you have a new package or appeal you are introducing. When creating test segments, you are sending the test out at the same time as the main mailing. If the test segment is successful, in a future mailing you may want to switch from the old package to the new package.

Test segments are part of a “parent” segment. If a segmentation is over budget, you may want to create a test segment that receives a less expensive mailing than the parent segment to bring down the total cost. This gives you the ability to not only bring the mailing in line with your budget, but to compare the response to the test segment with that of the parent, to ensure the more expensive mailing is really performing better than the less costly one.

Test segmentations differ from test segments. Test segmentations can be created by copying a percentage of an existing segmentation. You can then send a mailing to only that percentage to test its success. If the test is successful, you can send the mailing to the rest of the segmentation by filtering out the test, ensuring that the members of the test do not receive the mailing twice.

➢ Adding a test segment

1. On the Segmentation Wizard General tab, right-click on a segment and select **New**, **Test Segment**. The Test Segment screen appears.



2. Enter a **Name** and **Description** for the test segment.
3. You can specify a **Package** to associate with the test segment, but it is not required. Click the button beside the **Package** field to create a new package. For information about creating a package, see "Adding a segmentation" on page 174.
4. You can enter an expected **Response rate** for the test segment. You can also specify the expected **Gift amount** from respondents in the test segment. Entering this information enables you to compare the expected versus actual response rate when you analyze the test segment later.
5. In the **Sample size** field, enter a number and specify whether the number represents **Percent** or **Records**. For example, if you enter "50" and mark **Percent**, the test segment will include a random sampling of records equal to fifty percent of the total records in the parent segment. If you enter "50" and mark **Records**, fifty randomly sampled records will be included in the test segment.

   You may want to manually adjust the sample size to ensure segments are equally sized, to hold down costs, or to account for limits on mailing materials.
6. Click **OK**. You return to the Segmentation Wizard. The parent segment you selected now has a plus sign beside it. Click the plus sign and the test segment appears below the parent.

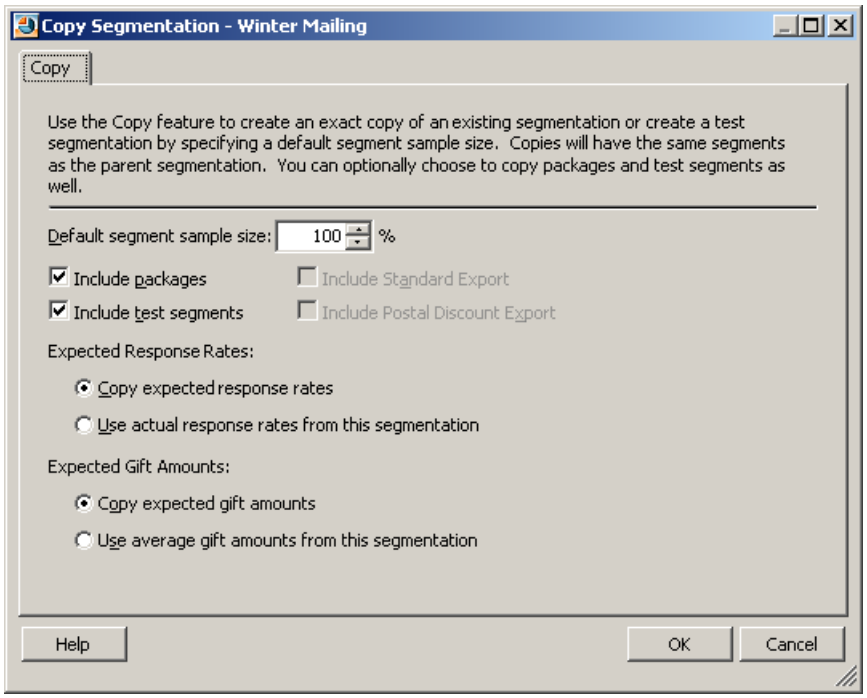
The **Records** column displays the number of records in a segment and the **Offers** column displays the number of mailing pieces for the segment. The **Offers** column displays the number of pieces in both the parent and test segment, so the sum of the offers for a parent and test segment equals the number of records for the segment.

7. To view the records included in a test segment, click **List Members** in the action bar. A random sampling of records in the test segment appear. Because the list is a random sample, these members may not necessarily appear in the test segment. Only when the segment is activated are the actual records determined that will make up the test segment.
8. You can create additional test segments, or click **Save** in the toolbar to save your work.

➢ Adding a test segmentation

You can copy active segmentations to create test segments.

1. Select the segmentation you want to copy in the tree view.
2. Click **Copy** in the action bar. The Copy Segmentation screen appears.


Copy Segmentation - Winter Mailing
Copy
Use the Copy feature to create an exact copy of an existing segmentation or create a test segmentation by specifying a default segment sample size. Copies will have the same segments as the parent segmentation. You can optionally choose to copy packages and test segments as well.
Default segment sample size: 100 %
Include packages
Include Standard Export
Include test segments
Include Postal Discount Export
Expected Response Rates:
Copy expected response rates
Use actual response rates from this segmentation
Expected Gift Amounts:
Copy expected gift amounts
Use average gift amounts from this segmentation
Help
OK
Cancel

3. Specify a **Default segment sample size**. If you select 100 percent, you create an exact copy of the segmentation. You can create a test segmentation by specifying a size less than 100 percent.
4. Mark checkboxes if you want to **Include packages** and **Include test segments** in the copy.

5. The **Include Standard Export** and **Include Postal Discount Export** checkboxes are enabled only when copying active segmentations in which you created these types of exports. When you mark the checkboxes, the export definitions are copied into the new segmentation and are available as soon as the new segmentation is activated.
6. If the segmentation you are copying has not yet been activated, the **Copy expected response rates** option is locked as marked. If the segmentation has been activated, you can select to **Use actual response rates from this segmentation** in the copy instead of the expected response rates.
7. If the segmentation you are copying has not yet been activated, the **Copy expected gift amounts** option is locked as marked. If the segmentation has already been activated, you can specify to **Use average gift amounts from this segmentation** in the copy instead of the expected entries.
8. Click **OK** to create the copy.
9. The Segmentation Wizard appears with the specified information copied from the existing segmentation. The name defaults to "Copy of <existing segmentation>."

   After you create a test segmentation, you can activate it to analyze its success in bringing in donations. If the test segment is successful, you can use filtering to send the mailing to rest of the segment without sending duplicates to the test segment. For more information about activating segmentations, see "Activating Segmentations" on page 193. For information about filtering segmentations, see "Filtering Segmentations" on page 184.

Custom Properties

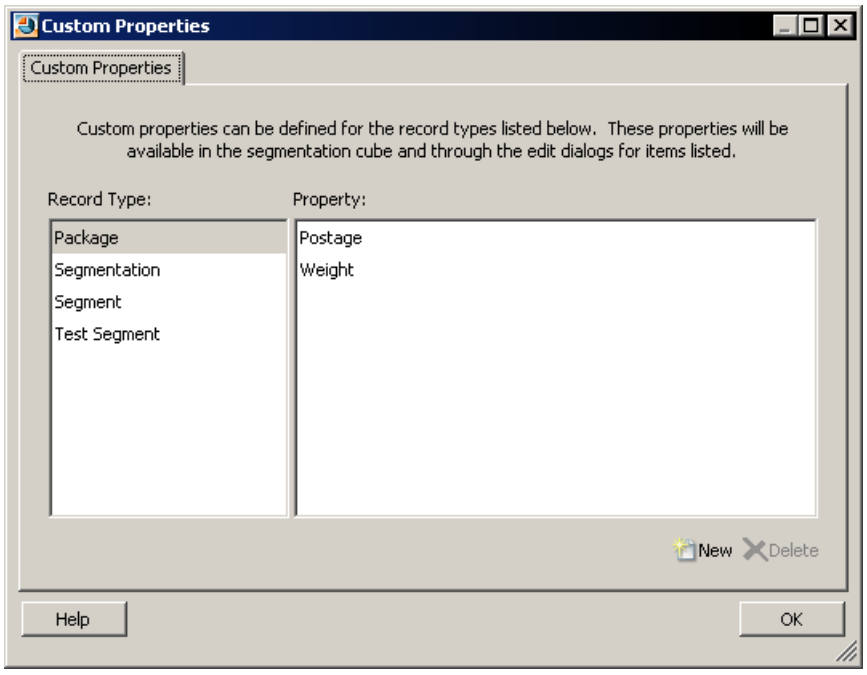
You can define properties for use in segmentations. Once you define a property, it is available for use in all data marts. For example, you can create a "Reply Envelope" property, with values of "Postage Paid," "Postage Required," and "None." When you add a property for a segmentation, the property is available to associate with all segmentations in all data marts (the property defaults to blank). In addition to segmentations, you can use the properties you define in segments, test segments, and packages.

Properties you create are available in the Segmentation cube as dimensions so you can use them in your analyses. For example, you may want to know whether a package with a heavier weight and mailing cost generates a reasonable return on investment compared to a lighter mailing, or whether including a postage paid envelope with your mailing generates more donations.

Only users with administrator rights can add properties; however, those with user rights can still use properties in records and add values for properties. Properties you define can also appear as properties in a Pivot Table or Chart.

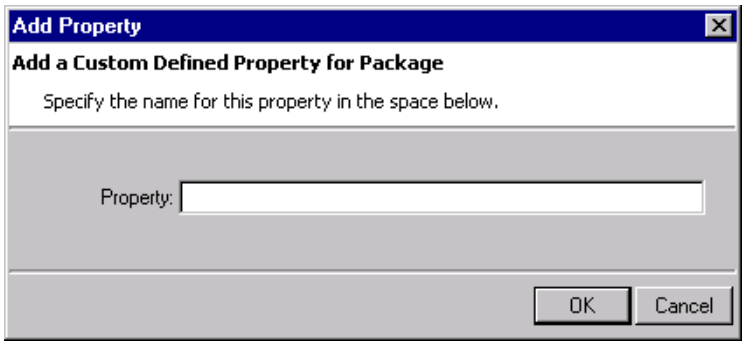
➢ Creating custom properties

1. From the menu bar, select **Tools**, **Custom Properties**. The Custom Properties screen appears.



   The **Record Type** box lists the table types for which you can create properties. The **Property** which corresponds to a field in the table appears on the right. You can add an unlimited number of properties.

2. To create a new property, click **New**. The Add Property screen appears.



   In the **Property** field, enter the name of the property, such as "Reply_envelope" or "Weight." You can enter text, numbers, or dates, but all entries are stored as text with no special formatting.

3. Click **OK**, you return to the Custom Properties screen where your new property now appears.

4. Click **Close** to exit the Custom Properties screen and return to the console.

   You can now access the property from within the Segmentation Wizard. For more information, see "Adding a segmentation" on page 174.

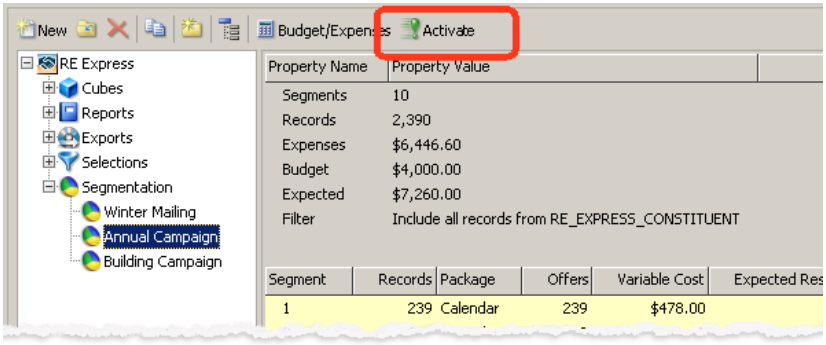
Activating Segmentations

Before you can analyze the effectiveness of a segmentation, you must activate it. By activating the segmentation, you are specifying a way to distinguish donations made as a result of the segmentation from all other donations received by your organization.

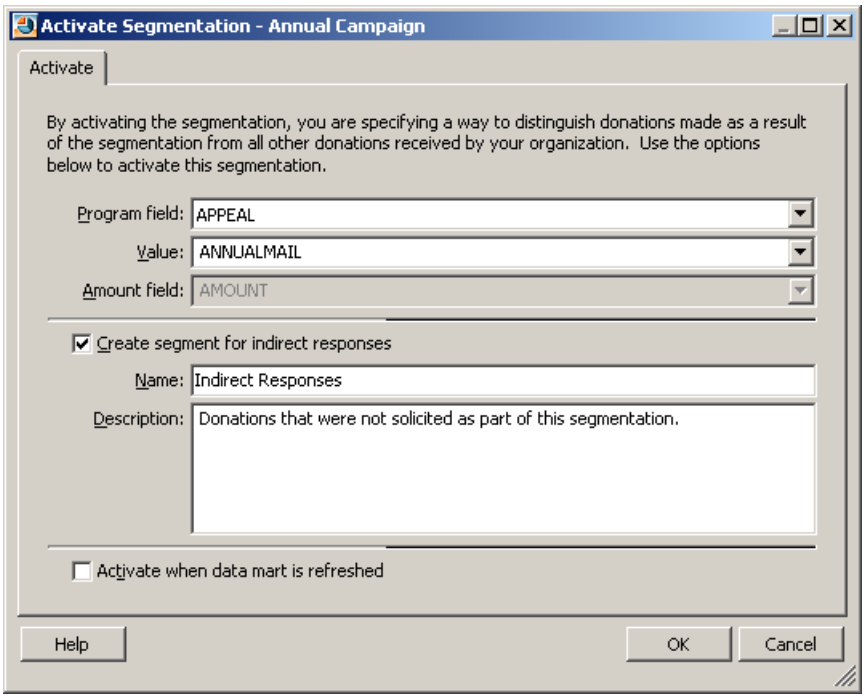
Once you activate the segmentation, you can use analysis tools such as Lift charts, as well as Pivot Tables and other Charts, to determine the effectiveness of the segmentation.

➢ Activating a segmentation

1. From the Segmentation page, select the segmentation you want to activate.



2. On the action bar, click **Activate**. The Activate Segmentation screen appears.


Activate Segmentation - Annual Campaign
Activate
By activating the segmentation, you are specifying a way to distinguish donations made as a result of the segmentation from all other donations received by your organization. Use the options below to activate this segmentation.
Program field: APPEAL
Value: ANNUALMAIL
Amount field: AMOUNT
Create segment for indirect responses
Name: Indirect Responses
Description: Donations that were not solicited as part of this segmentation.
Activate when data mart is refreshed
Help
OK
Cancel

3. Select a **Program field** and the **Value** from the field that you want to use to identify donations made as a result of this segmentation. This entry ensures that you can identify gifts that belong to a specific segmentation. For example, if you have ***The Raiser's Edge***, you may want to create an appeal for this purpose so that the appeal is associated only with gifts resulting from the segmentation mailing.
4. Mark the **Create segment for indirect responses** checkbox if you expect that some gifts may be received and associated with the **Program field** value you selected, even though the gifts were not prompted by the segmentation. Enter a **Name** and **Description** for this segment.
5. Mark the **Activate when data mart is refreshed** checkbox if you want to activate the segmentation the next time the data mart is refreshed instead of now.

   Depending on the properties of your segmentation and the data it includes, it may take some time to activate. By marking this checkbox, you can activate the segmentation immediately before the data mart is refreshed the next time instead of waiting for it to process now.
6. Click **OK**. If you did not mark the **Activate when data mart is refreshed** checkbox, a message appears asking if you are sure you want to activate the segmentation.
7. Click **Yes**. The activation processes. This may take some time depending on the properties of the segmentation.
8. You return to the Segmentations page of ***The Information Edge***. The segmentation is now active and ready for analysis.

   Rows highlighted in red in an activated segmentation indicate that the amount a segment has brought in is less than the total expenses for the segment. When the donations for a segment exceed the expenses, the row is no longer highlighted in red.

   For more information about analyzing the segmentation, see "Analyzing Segmentations" on page 198.

Once you activate a segmentation, you should not change the appeal ID (or any other value you may have used to activate the segmentation). If you do, no records will appear in the segmentation. If for some reason you must change the value used to activate a segmentation, you can copy the segmentation and re-activate it using the new value.

Exporting Segmentations

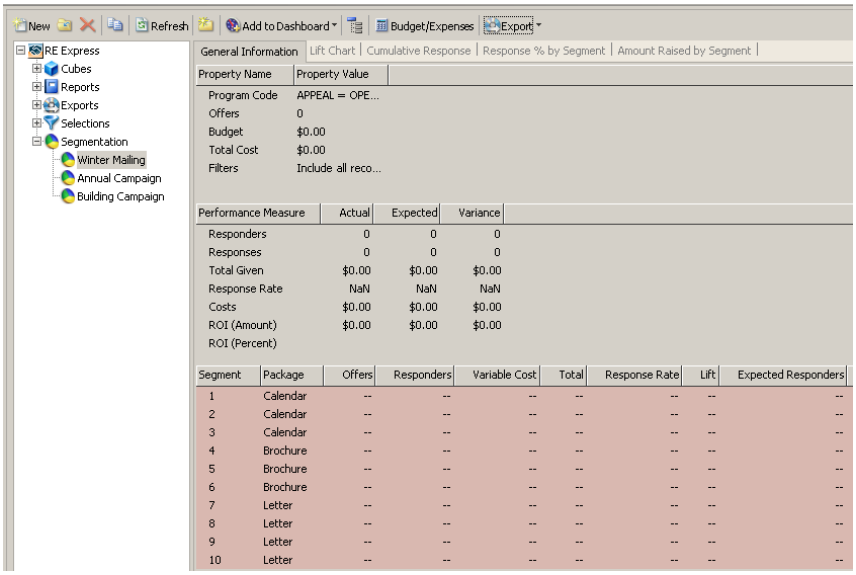
Only data marts that are constructed to be "aware" of ***The Raiser's Edge*** have the ***Raiser's Edge*** export options available. These include all data marts created with *RE:Express*.

You can create a standard export definition for a segmentation, or create an export file especially for ***The Raiser's Edge***. When you create a segmentation export for ***The Raiser's Edge***, a plug-in enables you to import the segmentation data, associate it with a specific appeal, create packages for that appeal, and associate constituents with the appeal. For more information about the plug-in, see "Importing segmentation data into The Raiser's Edge with the segmentation plug-in" on page 196.

In addition to exporting the entire segmentation, you also export just the segmentation grid to provide a hard copy of segmentation details and counts.

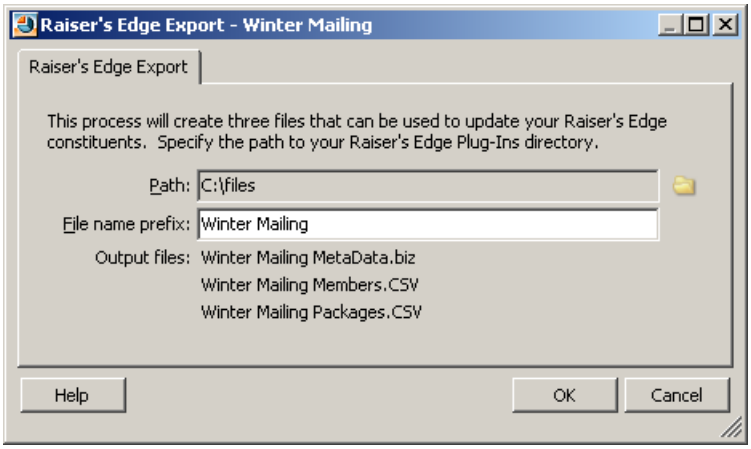
➢ Exporting a segmentation

1. On the tree view, select a segmentation you want to export.



2. On the action bar select **Export**. You can select to create a **Raiser's Edge**, **Postal Discount**, or **Standard** export.
3. If you want to create a standard export, select **Standard** and follow the steps in "Creating an export definition" on page 89.

   If you want to create a Postal Discount export, select **Postal Discount**. See "Postal Discount Exports" on page 97 for more information.
4. To create a ***Raiser's Edge*** export, select **Raiser's Edge**. The Raiser's Edge Export screen appears.

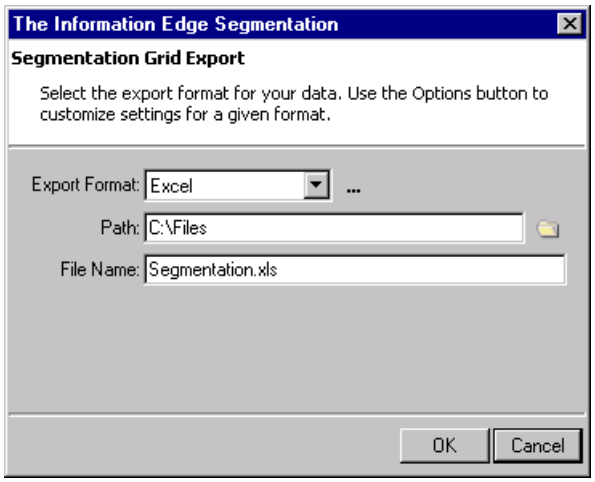


5. Enter the **Path** to the location where you want to save the export files. Three files will be created in this directory for use within ***The Raiser's Edge***.
6. Specify a **File name prefix** to be included on the files that will be created in the directory you specified in the previous step.

7. Click **OK**. A message informs you that the data is being exported. When the export completes, you can use the segmentation plug-in to import the data into ***The Raiser's Edge***. For more information, see "Importing segmentation data into The Raiser's Edge with the segmentation plug-in" on page 196.

➢ **Exporting the segmentation grid**

1. On the tree view, select a segmentation from which you want to export the grid.
2. Right-click in the grid and select **Export Grid**. The Export grid screen appears.



3. Select the **Export Format**. Browse to enter the **Path** to the location where you want to save the file, and specify a **File Name**.
4. Click **OK** to save the export file in the specified location.

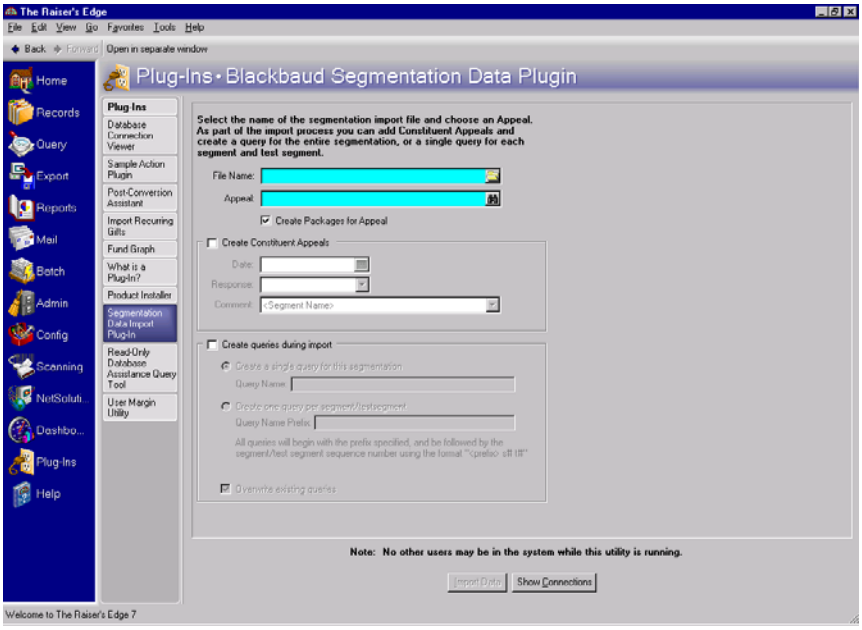
Importing Segmentations Into The Raiser's Edge

Once an export is complete, you can import the data into ***The Raiser's Edge*** using a plug-in designed especially to work with ***Information Edge*** data. Before you import data, make sure no other users are connected to ***The Raiser's Edge***. The plug-in writes to several record types, so you need to ensure that no users have records open before using it.

➢ **Importing segmentation data into The Raiser's Edge with the segmentation plug-in**

1. Before you can use the segmentation plug-in, you must first install it. To do so, copy the "SegmentationPLG.dll" and "SegmentationPLG.vbd" files from the directory where you installed ***The Information Edge*** into your RE7\Plugins directory.
2. To use the plug-in, log into ***The Raiser's Edge***. Click **Plug-Ins** on the Raiser's Edge bar. The Plug-ins page appears.

3. On the Plug-ins page, select **Segmentation Data Import Plug-in**. The Segmentation Data Plug-in page appears.


The Raiser's Edge
File Edit View Go Favorites Tools Help
Back Forward Open in separate window
Home
Records
Query
Export
Reports
Mail
Batch
Admin
Config
Scanning
NetSolutions
Dashboards
Plug-Ins
Help
Plug-Ins • Blackbaud Segmentation Data Plugin
Plug Ins
Database Connection Viewer
Sample Action Plugin
Post-Conversion Assistant
Import Recurring Gifts
Fund Graph
What is a Plug-In?
Product Installer
Segmentation Data Import Plug-In
Read-Only Database Assistance Query Tool
User Margin Utility
Select the name of the segmentation import file and choose an Appeal. As part of the import process you can add Constituent Appeals and create a query for the entire segmentation, or a single query for each segment and test segment.
File Name:
Appeal:
Create Packages for Appeal
Create Constituent Appeals
Date:
Response:
Comment:
<Segment Name>
Create queries during import
Create a single query for this segmentation
Query Name:
Create one query per segment/test segment
Query Name Prefix:
All queries will begin with the prefix specified, and be followed by the segment/test segment sequence number using the format "<prefix> sft ##"
Overwrite existing queries
Note: No other users may be in the system while this utility is running.
Import Data
Show Connections
Welcome to The Raiser's Edge 7

4. In the **File Name** field, click the folder icon and select ***The Information Edge*** export file you want to import into ***The Raiser's Edge***. Remember, the files you exported are named using the prefix you established in the procedure for "Exporting a segmentation" on page 195.
5. Select the **Appeal** in ***The Raiser's Edge*** with which you want to associate the segmentation information. To best enable analyzing the effectiveness of your segmentations, we recommend you create a separate appeal for this purpose.
6. Mark the **Create Packages for Appeal** checkbox if you want to create ***Raiser's Edge*** appeal packages from the packages in your ***Information Edge*** segmentation.
7. Mark the **Create Constituent Appeals** checkbox if you want the appeal you specified in step 5 to appear on the Appeals tab of constituent records included in the segmentation.

   Select the **Date** to include on the Appeals tab of the constituent records, and specify a default **Response** and **Comment**. The comment can be formatted in a variety of ways and includes information about the segment to which the constituent belongs.
8. Mark the **Create queries during import** checkbox if you want to group constituent records included in the segmentation.

   If you want one query containing all the constituent records in the segmentation, mark the **Create a single query for this segmentation** option and specify a **Query Name**.

   If you want individual constituent queries to be created for each segment within the segmentation, mark the **Create one query per segment/test segment** option. Enter a **Query Name Prefix** to make these queries easier to identify.

9. If you have already imported data, and want new queries to replace any previously generated, mark the **Overwrite existing queries** checkbox.
10. No others users should be logged into ***The Raiser's Edge*** when you import data. Click **Show Connections** to ensure that no other users are connected.
11. Click **Import Data**. The information is imported into ***The Raiser's Edge***. Depending on the number of records being imported, this process may take some time.

    If any errors occur when running the segmentation plug-in, a message appears telling you that a log file has been created in the folder with ***The Information Edge*** Export files.

    After the import is complete, the data is available in ***The Raiser's Edge***.

Notes About Importing Appeal Comments

The value of the **Appeal Comments** field on ***Raiser's Edge*** constituent records is limited to 50 characters. When importing segmentation information, the comments generated can result in values larger than 50 characters for some constituent records. This depends on the option you selected for the **Comment** field in the segmentation plug-in, and the length of your segment and test segment names. Any comment over 50 characters is truncated to the first 50 characters.

You can avoid truncated comments by using shorter names for segments and test segments. If truncation results in comments that are not useful, here is how you can make changes to them:

- Right-click the segment in ***The Information Edge*** and select **List Members**. The Drill Through screen appears.
- Create a WriteBack query in ***The Raiser's Edge***.
- Use the query in a ***Raiser's Edge*** constituent Global Change to change the entry in the **Appeal Comments** field for the constituents included in the selected segment.

  If you want to globally change **Appeal Comments** to different values for a segment and a test segment, globally change the segment first, then change the test segment. The WriteBack Query for the segment includes members of the test segments, so you need to change records in the test segments after changing the records in the segment. If you changed the test segments first and then changed the segment, all the records would have the value you assign for the segment. You can run a separate change for any other test segments that you want to have a different value from the segment or other test segments.

Analyzing Segmentations

You can include segmentation charts in your Publications. For more information, see "Publications" on page 123.

You can analyze the effectiveness of your segmentations using a variety of tools. You can analyze all your segmentations using the tools available in ***The Information Edge*** such as Pivot Tables and Charts. Additional tools, such as specific charts to track response percent by segment and donation amount by segment, are available to analyze the success of individual segmentations.

When you create segmentations, an OLAP cube named "Segmentation Data" is created in the data mart. You can use the analytical tools in ***The Information Edge*** to examine your segmentation data.

Lift Charts

You can use Lift Charts to gauge the success of individual segmentations. The purpose of a segmentation is to identify a subgroup from a larger group that is more likely to give than the entire group. A segmentation is successful when the giving response within the target group is better than average for the group as a whole. Lift is the ratio of these values: target response divided by average response. A Lift Chart enables you to quickly analyze these values.

You can filter the Lift Chart by **Range** of lift. When you select a range, any segments that fall outside that range are excluded from the chart. You can also specify to sort the lift in ascending or descending order, and specify to **Show** a specific number of top or bottom segments.

When you select to show the top or bottom number segments, you are not specifying to see the largest and smallest values. You are actually specifying to see the first or last values from the list after it has been sorted. So, the data is first sorted, then the top or bottom (first or last) values are selected from the sorted data based on your selections.

Cumulative Response

Use the Cumulative Response chart to gauge the overall response to your segmentation.

You can filter the Cumulative Response chart by percentage **Range** of responders for each segment. When you select a range, any segments that fall outside that range are excluded from the chart. You can also specify to sort the segments in ascending or descending order, and specify to **Show** a specific number of top or bottom segments.

When you select to show the top or bottom number of segments, you are not specifying to see the largest and smallest values. You are actually specifying to see the first or last values from the list after it has been sorted. So, the data is first sorted, then the top or bottom (first or last) values are selected from the sorted data.

Response % By Segment

Use the Response % By Segment chart to review the percentage of your overall response generated by each individual segment within a segmentation.

You can filter the Response % By Segment chart by percentage **Range** of response for each segment. When you select a range, any segments that fall outside that range are excluded from the chart. You can sort the information in a variety of ways, including ROI (Percent), ROI (Amount), Expected Response, and Expected Gift Amount. You can sort this information in ascending or descending order. You can also specify to **Show** a specific number of top or bottom segments.

When you select to show the top or bottom number of segments, you are not specifying to see the largest and smallest values. You are actually specifying to see the first or last values from the list after it has been sorted. So, the data is first sorted, then the top or bottom (first or last) values are selected from the sorted data.

Amount Raised By Segment

Use the Amount Raised By Segment chart to review the amount generated by each individual segment within a segmentation. If you specified an expected gift amount for each segment, you can compare the expected with the actual results.

You can filter the Amount Raised By Segment chart by **Range** of monetary amount generated by each segment. When you select a range, any segments that fall outside that range are excluded from the chart. You can sort the information in a variety of ways, including ROI (Percent), ROI (Amount), Expected Response, and Expected Gift Amount. You can sort this information in ascending or descending order. You can also specify to **Show** a specific number of top or bottom segments.

When you select to show the top or bottom number of segments, you are not specifying to see the largest and smallest values. You are actually specifying to see the first or last values from the list after it has been sorted. So, the data is first sorted, then the top or bottom (first or last) values are selected from the sorted data.

Test Segment Performance

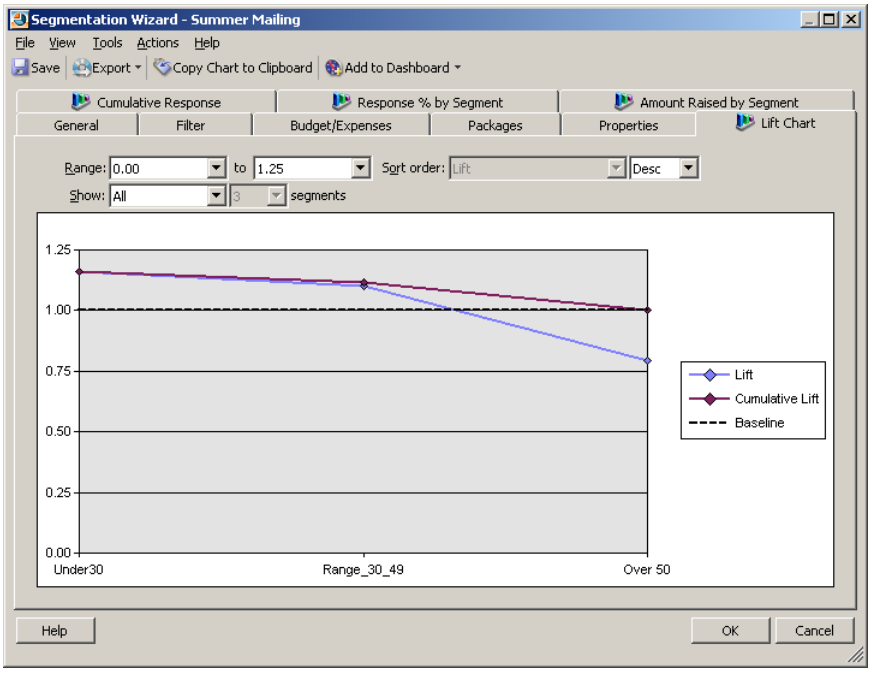
Use the Test Segment Performance chart to review the productivity of test segments. For more information about creating test segmentations, see “Adding a test segmentation” on page 190.

The chart shows performance based on response rate and return on investment. You can filter the Test Segment Performance chart by **Segment**, and sort the results in a variety of ways, including Offers, Responders, and Total Amount. You can sort this information in ascending or descending order.

➢ **Analyzing an individual segmentation**

1. On the Segmentation page, open an active segmentation.

2. The analysis options are available as separate tabs. For example, select Lift Chart and the chart appears.



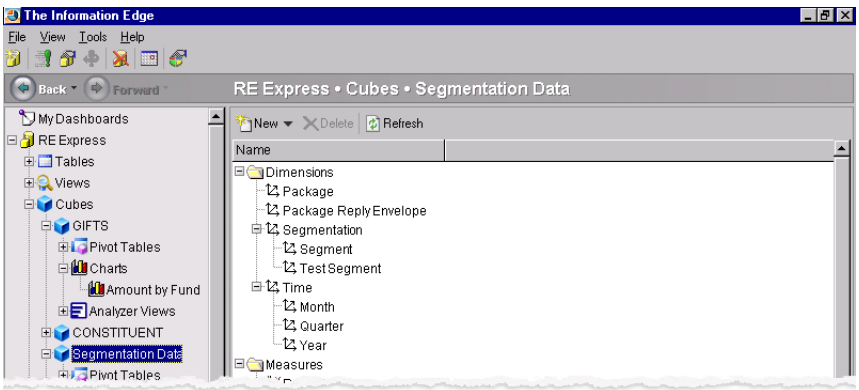
Each chart features different viewing options. For example, you can filter the Lift Chart by **Range** of lift, sort the lift in ascending or descending order, and specify to show a specific number of top or bottom performing segments.

3. Click any of the other items along the top of the segmentation pane to view information such as cumulative response and response percent by segment.

You can include segmentation charts in your Publications. For more information, see "Publications" on page 123.

➢ Analyzing all segmentations

1. From the tree view, click the plus sign beside **Cubes** in a data mart for which you have activated one or more segmentations. Select the cube named "Segmentation Data."



2. The Segmentation Data cube contains information for all active segmentations. You can use analytical features such as Pivot Tables and Charts to analyze the segmentations and compare and contrast them with each other. For more information about analyzing data in cubes, see “Cubes” on page 63.

Universal Source Connector

Chapter 6

Contents

New Features in The Information Edge 1.7 205
Creating Data Marts with XML 214
Adding Universal Source Connector Data Marts 214
The Information Edge XML Editor 221
Accessing the XML Editor 221
Using The Information Edge XML Editor 222
Microsoft Access Database Wizard 226
Primary Keys and the Access Wizard 226
Microsoft Excel Wizard 229
Primary Keys and the Excel Wizard 230
Microsoft OLEDB Data Source Wizard 234
Microsoft SQL Server Wizard 236
Validating XML Files 240
XML Schema Reference. 241
BIPACKAGE 242
TABLE 243
CUBE 251
SEGMENTATIONINFO 254
Macros 254
Indexing Fields 255
Incremental Refresh in Universal Source Connector Data Marts 255
Time Date Stamp Format Characters 256
Incremental Command Text Macros and Examples 256

Procedures

Adding a Universal Source Connector data mart 215
Completing the Universal Source Connector General tab 215
Completing the Universal Source Connector Refresh Options tab 216
Completing the Universal Source Connector USC Definition tab 218
Completing the Universal Source Connector Publications tab. 220
Creating an XML file in the XML editor 222
Creating a data mart from an Access database 226

Creating a data mart from an Excel spreadsheet 230
Creating a data mart with the OLEDB Data Source Wizard. 234
Creating a data mart with the SQL Server Wizard 237

The *Universal Source Connector* feature in the Enterprise version of ***The Information Edge*** enables you to create your own data marts so you can add your data sources for analysis. A data mart consists of a series of data structures such as tables and cubes, and the data to populate those structures. To create a data mart, you write an XML file that defines the tables, fields, data types, and cubes for your data mart. You can create multiple tables within an XML file and use multiple data sources to populate one table.

The *Universal Source Connector* also includes ***The Information Edge XML Editor***. This utility helps you to create and validate XML files. Additionally, the editor includes wizards to help you create data marts from Microsoft *Access* databases, *Excel* spreadsheets, and OLEDB data sources.

You can bring data in from a variety of sources.

- You can use SQL statements to bring in ***Raiser's Edge*** or ***Financial Edge*** data. You may want to bring in specific subsets of *RE:Express* data.
- Any ODBC or OLE data source. This includes *Access* databases as well as numerous other database types.
- Proprietary API systems (not ODBC or OLE) are supported. You must create the code that interacts with these APIs.
- You can specify a subset of ***Information Edge*** data for even faster processing. For example, you may want to include only records from a certain region.

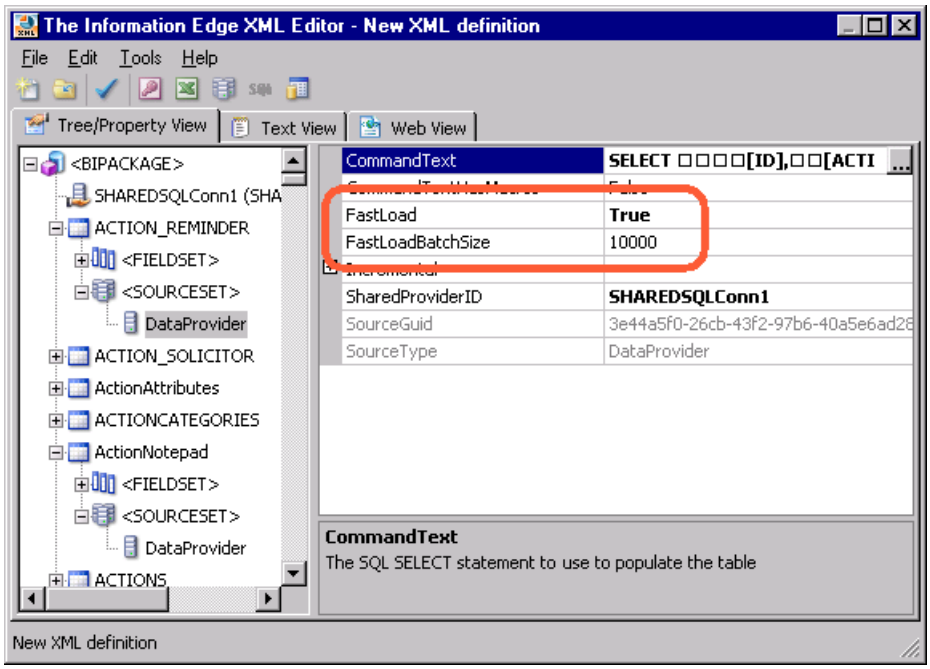
New Universal Source Connector Features in The Information Edge 1.7

Performance Optimizations

Several optimizations were made to help increase the speed of loading tables, particularly during an incremental refresh. The USC Incremental refresh option is now more robust. Smart fields on a USC data mart can now be specified to process incrementally. For more information, see "Incremental IDsChangedSQL" on page 208.

Bulk Load (FastLoad) Support for DataProvider Sources

The <SOURCESET>\<DATAPROVIDER> element has two new attributes that are valid for OLEDB and MSSQL provider types: FastLoad and FastLoadBatchSize.



FastLoad

Specify true or false, defaults to **false**

When pulling data from OLEDB or MS SQL Server sources, setting this to “true” causes ***The Information Edge*** to use the SQL Server bulk load feature (the OLEDB IRowSetFastLoad interface available via the DTS DataPump API).

However, not all CommandText SQL statements can be used with FastLoad=True. If the SQL statement contains any expressions that are not direct column names from a table or view, then the expression must have an alias. For example, the statement:

Select `First_Name + ', ' + Last_Name, ID from dbo.RECORDS`

would not be eligible for FastLoad=True because the first column in the select statement is an expression that has not been named.

If you change this SQL to:

```
Select First_Name + ', ' + Last_Name as 'Name' , ID from
dbo.RECORDS
```

then FastLoad=True can be used.

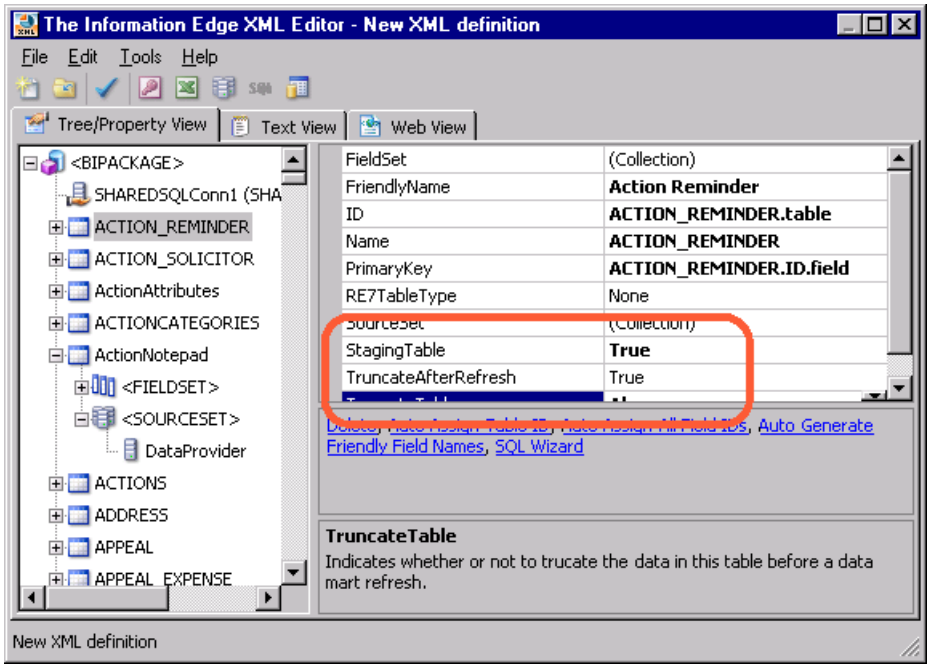
Because USC supports any arbitrary OLEDB or MSSQL datasource/sql statement, you need to test your source to make sure it works with FastLoad. Most standard OLEDB connections will work properly as will most SQL statements that conform to the above requirements. However, some particular SQL statements may be incompatible because of incompatible data types. For example, with FastLoad=False the USC is more forgiving for data that is typed as Text in the source but is being mapped to a DateTime column in ***The Information Edge*** table.

FastLoadBatchSize

This attribute specifies the number of rows to insert in a single batch. The default is 10,000, a value of 0 means to insert all rows in one batch. We recommend you thoroughly test that any change from the default to make sure it provides a benefit.

Support for Staging/Hidden Tables

The <TABLE> element now supports two new attributes to help make using staging tables more convenient. The USC has always supported multiple steps under the <SOURCESET> element that could be used to implement staging tables. New for 1.7 are explicit attributes to designate a particular table as a staging table: StagingTable and TruncateAfterRefresh.



StagingTable

Specifying this attribute indicates that the table will not be visible in ***The Information Edge*** user interface and enables a second attribute TruncateAfterRefresh.

When using Incremental refresh with FastLoad=True, you must also specify the IDsChangedSQL if you want to use FastLoad=True and have the incremental process use bulk loading. See “Incremental IDsChangedSQL” on page 208 for more information.

TruncateAfterRefresh

This attribute defaults to True. When True, it indicates that after a refresh has completed, the staging table should be truncated and all data removed from the table. For a true staging table this will typically be the case. However, in advanced Extract, Transform, and Load processes you may want to keep data in the staging table for the purposes of incremental refresh support. In those rare cases, you can specify False so that the data remains in the table after the refresh.

Another attribute “Hidden=True” is available as well. In 1.7 this is similar to StagingTable=True because it hides the table from the ***The Information Edge*** user interface.

Incremental IDsChangedSQL

In previous versions, the USC incremental process could determine only the IDs that changed based on the results of the data set produced by the CommandText SQL statement. For each row in the result set, the USC would delete the corresponding row in the destination table and then re-insert all the data. Now you can specify a SQL statement that returns the set of IDs that have been changed from the standpoint of the incremental timestamp, and USC will delete all these rows in a single statement. This helps improve the performance of incremental processing, and is required when using the FastLoad=True attribute to bulk load during an incremental refresh.

The form of the SQL statement will typically match the FROM and WHERE clause of the CommandText that is configured for incremental processing but will specify only the ID column in the select statement. For example, if the CommandText is:

```
SELECT ID, FIRST_NAME,LAST_NAME
FROM DBO.RECORDS
WHERE ((RECORDS.IS_CONSTITUENT = -1) AND (RECORDS.DECEASED =
0) AND
(RECORDS.DATE_LAST_CHANGED BETWEEN '{@@LASTENDPOINT}' AND
'{@@CURRENTENDPOINT}'))
```

then the IDOnlySQL should be:

```
SELECT ID
FROM DBO.RECORDS
WHERE ((RECORDS.IS_CONSTITUENT = -1) AND (RECORDS.DECEASED =
0) AND
(RECORDS.DATE_LAST_CHANGED BETWEEN '{@@LASTENDPOINT}' AND
'{@@CURRENTENDPOINT}')
```

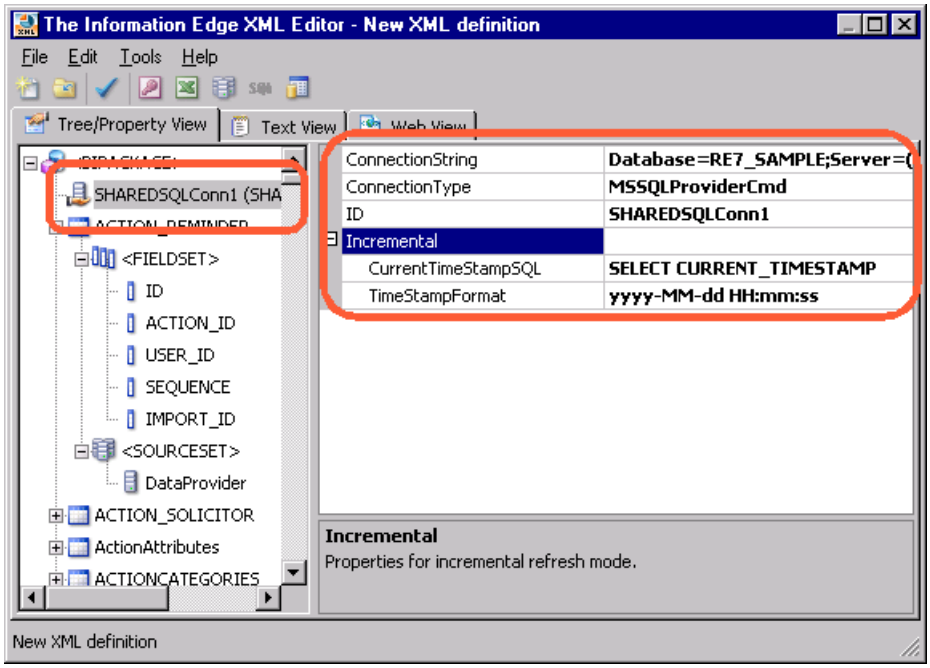
Note that the only difference is in the SELECT clause. In more complicated CommandText SQL statements with JOINS included, you may or may not need to perform those same joins in the IDOnlySQL - the SQL should specify the set of IDs that will match the same criteria as the main CommandText that is used to load the table.

Shared Connections

In previous versions, each provider under the <DATASOURCE> element had to provide its own ConnectionString. While this enabled great flexibility, it could be inconvenient if you had many tables all connecting to the same source. In version 1.7 you can now specify one or more <SHAREDPROVIDER> elements that contain a connectionstring and then reference those by name in the <DATAPROVIDER> element. This makes it easy to move a USC to different servers/sources because you can just make a change to a single connection string in one place.

In addition to the ConnectionString, you can also specify the CurrentTimeStampSQL and TimeStampFormat for incremental refreshes since these are usually the same for a given source regardless of the CommandText being used to load the table.

The screenshot below shows referencing the SharedProviderID from a DATAPROVIDER element.



SQL Server Connection Enhancements

Several new features and wizards have been added to make connecting with SQL Server data sources easier.

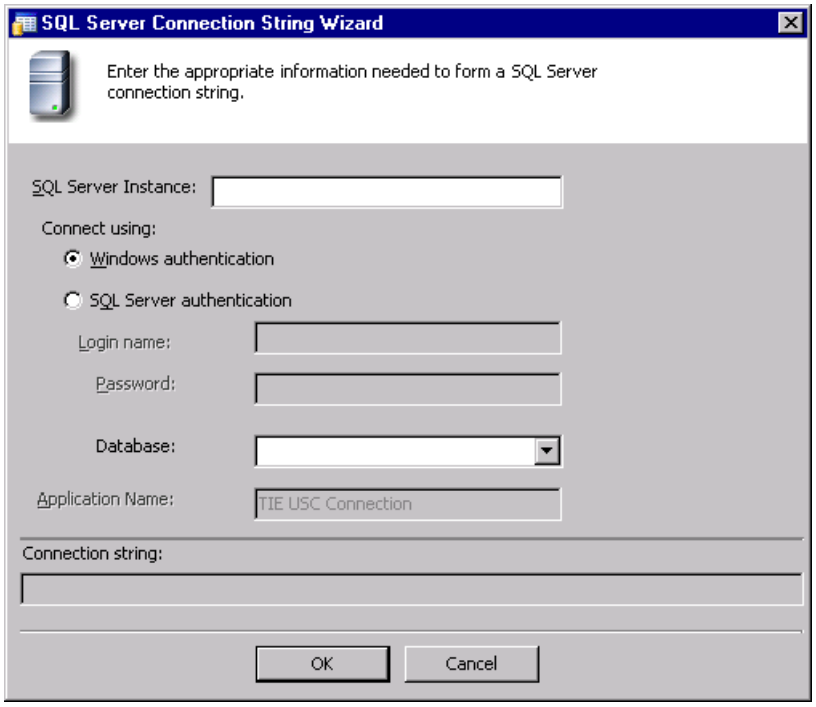
SQL Server Wizard

In previous versions, you could access the OLEDB Wizard to get started creating a USC data mart even if the datasource was actually a SQL Server source. To make accessing a SQL Server source even more convenient, there is now a specific wizard for SQL Server that lists out all tables and views for a SQL Server database and has a friendlier connection string screen.

This wizard does not “round-trip.” Through the wizard, a set of <TABLE>, <FIELDSET>, etc. elements is created, but from that point on you have to manually edit any elements/attributes that you want to change. However, you can also use the new SQL Table Wizard which does support round-tripping.

Connection String Wizard

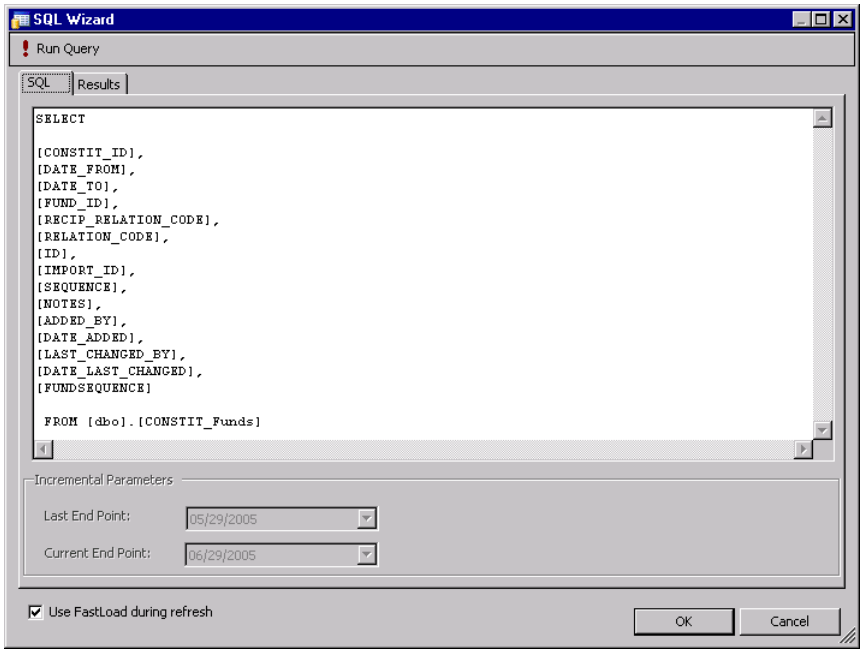
A new wizard is available when specifying a connection string for SQL Server specifically. This wizard can be accessed from any place in the XML Editor where there is a connection string property and the current connection type is MSSQLServer.



SQL Table Wizard

In previous versions, the only way to update a SQL statement and the associated field properties was by hand. You had to make sure that the <FIELDSET> elements aligned with the appropriate offset for each column in the SQL statement. This could be a time consuming task.

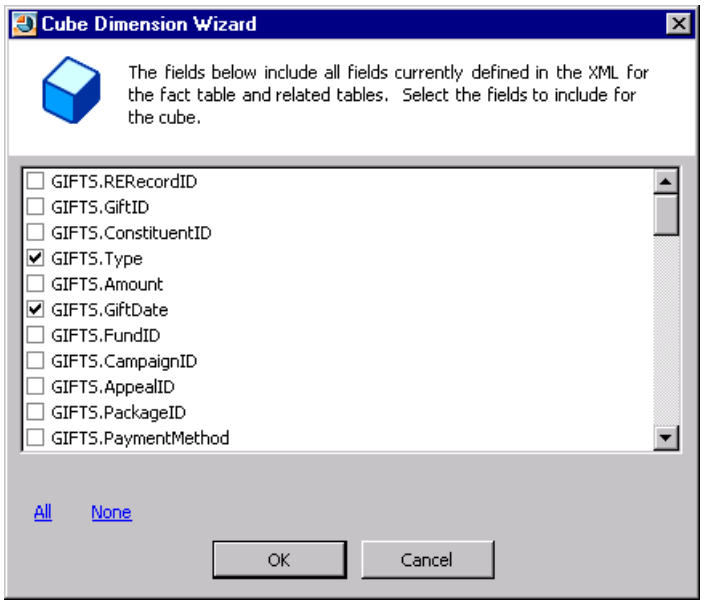
In version 1.7, for SQL Server sources a new wizard is available which will round-trip the SQL statement/<FIELDSET> definitions and keep them in sync. When you select a table in the XML Editor tree view, a link to the SQL Wizard is available on the right under the table attributes. When you access the wizard, you can alter the SQL and preview the results.



When you click **OK** in the wizard, the <FIELDSET> elements are updated to reflect any changes you make in the SQL statement. For an incrementally configured SQL statement, you can use sample dates to preview the output.

Dimension Wizard

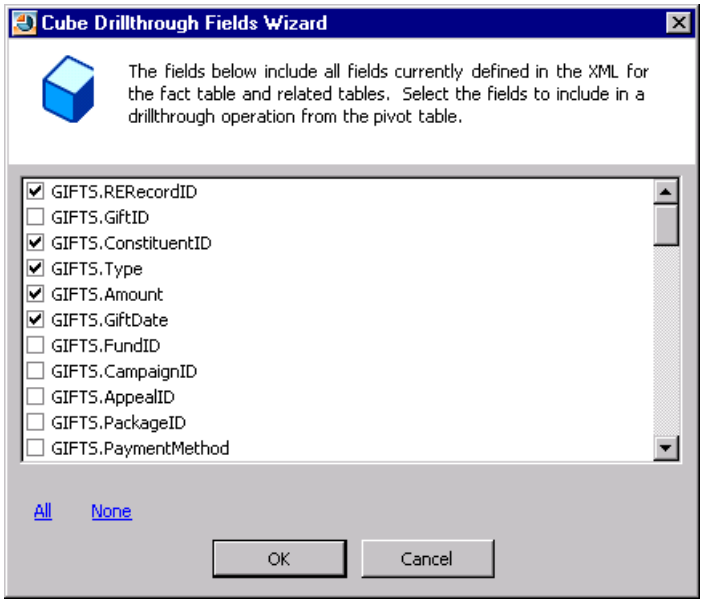
A new wizard enables you to select/deselect dimensions to include in the USC <CUBE> definition. To access the wizard, select a cube in the XML Editor tree view and click the **Dimension Wizard** link on the right. The list of fields in the wizard is based on the fact table and any other tables with foreign keys to the fact table.



Adding a field from a given table automatically establishes the appropriate <JOINKEY> elements for the cube. Once the <JOINKEY> elements have been established, you can use the new Drillthrough wizard to set up the drillthrough fields.

Drillthrough Field Wizard

The set of fields in this wizard is pulled from the list of fields for the fact table and any tables related to the fact table as specified by the <JOINKEY> elements on the cube. Selecting a field automatically establishes the appropriate <DRILLTHROUGHJOINKEY> elements.



To access the wizard, select a cube in the XML Editor tree view and click the **Drillthrough Fields Wizard** link on the right.

"Friendly Name" Support

All <FIELDSET>, <MEASURE>, and <DIMENSION> elements now support a "FriendlyName" attribute in support of the 1.7 "View Friendly Names" feature.

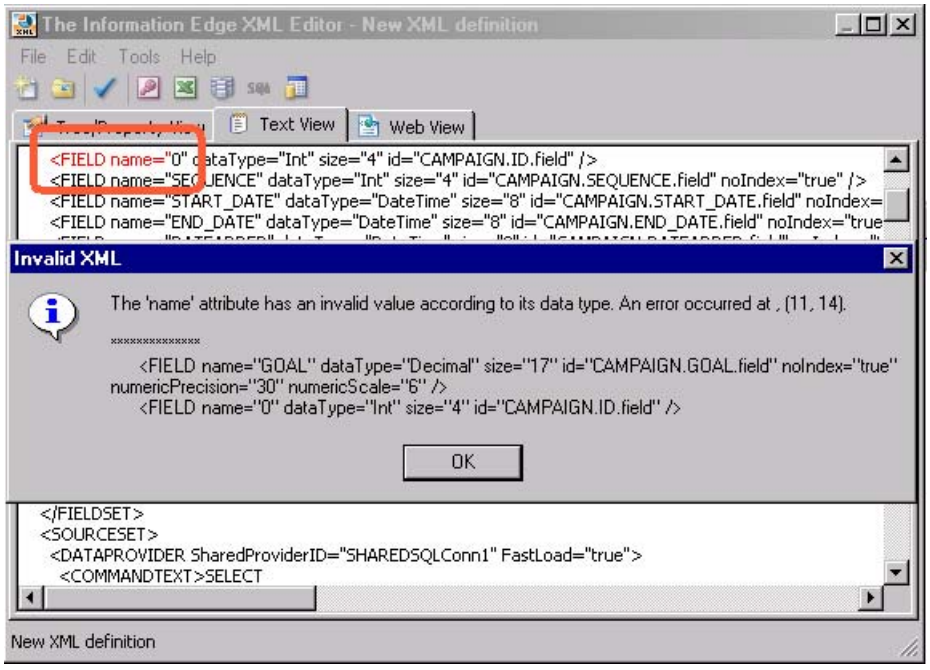
Support for Additional SQL Data Types

The USC now supports the uniqueidentifier, tinyint, real, and timestamp SQL data types. Timestamp maps to varbinary(8) in the destination table. The other types map to their respective type in the destination table.

Improved Error Messaging

In previous versions if your XML included an error, a message alerted you to the error, but did not reveal its location. In version 1.7 a more descriptive error message appears, including the context of the error, and you are taken to the offending XML on the Text View tab of the editor.

In the example below, a field has a name “0” which is not a valid field name. The error message includes the context of the bad XML and the error is highlighted in red on the Text View tab.



Creating Data Marts with XML

You can define data marts in an XML file and then import the marts into ***The Information Edge***. When creating XML files to define data marts, a key point to consider is that the XML must conform to the BIPACKAGEDEFINITION.XSD schema (included with ***The Information Edge*** and available in the “The Information Edge\BIN” folder).

The XML in your files must be well formed, meaning it must comply with constraints such as the correct use of markup syntax.

An XML schema specifies how to formally describe the elements in an XML document. When you create an XML file using ***The Information Edge XML Editor***, the schema supplied with ***The Information Edge*** is automatically attached to the file and used to verify that each item of content in your XML file adheres to the description of the element in which the content is to be placed. The XML is validated against this schema. For more information about using the editor, see “The Information Edge XML Editor” on page 221. For more information about the XML elements specific to ***Information Edge*** data marts, see the “XML Schema Reference” on page 241.

Adding Universal Source Connector Data Marts

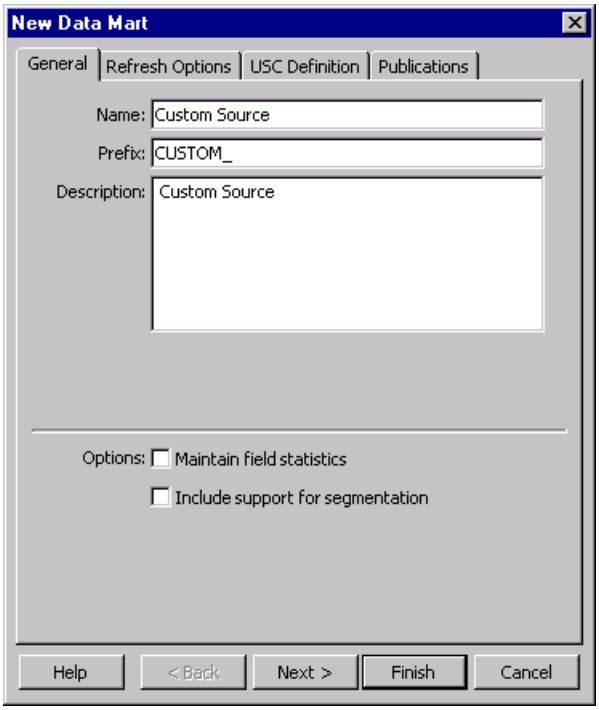
To add a custom data mart, you must specify a name and prefix for the mart, then indicate the location of the XML file from which ***The Information Edge*** will construct the mart.

➢ Adding a Universal Source Connector data mart

1. On the menu bar, select **File**, **New**. Select **Data Mart**, **Universal Source Connector**, the New Data Mart screen appears on the General tab. For information about entering information on the General tab, see the next procedure.
2. The first time you process a data mart, all records are included. If you set certain properties in your data mart definition, for subsequent processings you can specify whether you want to refresh all records or only those records that have changed since the last time you processed the mart. For more information, see "Completing the Universal Source Connector Refresh Options tab" on page 216.
3. You must create an XML file or specify an existing one to define the custom data mart. For more information, see "Completing the Universal Source Connector USC tab" on page 218.
4. After you add exports and HTML Publications to a data mart, you can specify that they process automatically whenever the data mart processes. For more information, see "Completing the Universal Source Connector Publications tab" on page 220.

➢ Completing the Universal Source Connector General tab

1. While creating or editing a Universal Source Connector data mart, select the General tab.



2. Enter a name to display for this data mart in the tree view in the **Name** field. Enter a prefix to display with each table entry for this warehouse in the **Prefix** field. Enter text to describe the warehouse in ***The Information Edge*** console in the **Description** field.

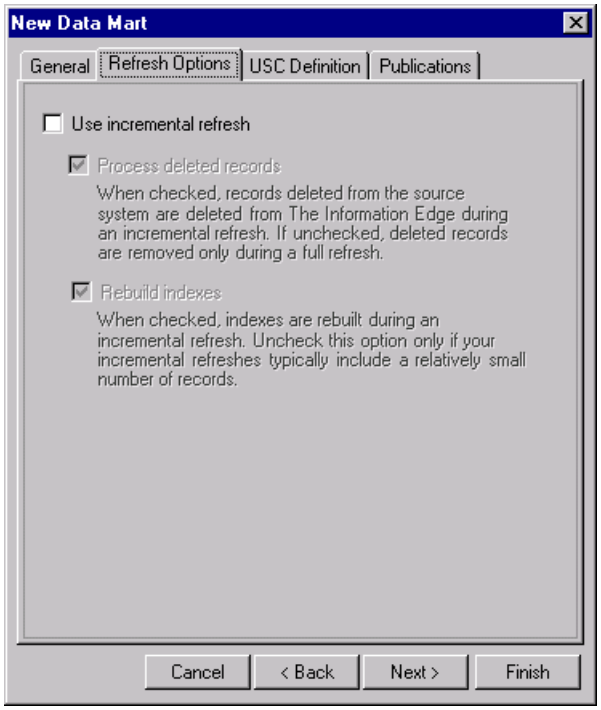
3. Mark the **Maintain field statistics** checkbox if you want to view information such as data type, how many instances do and do not contain data, and the number of different values for each field in the mart. Tracking field statistics enables you to determine whether a field is valid for further analysis based on its population.
4. If you have the *Marketing Segmentation* optional module, you can mark the **Include support for Segmentation** checkbox so that the data mart is optimized for use with this module.

   When you mark the checkbox, a cube containing specific dimensions and measures for use with segmentations is created for the data mart. These features enable you to easily create lift charts, and views such as response percent by segment and cumulative response.
5. If you are creating a new custom data mart, click **Next** to access the USC Definition tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing data mart, click **OK** to save your changes and exit the properties tabs.

➢ **Completing the Universal Source Connector Refresh Options tab**

1. While creating or editing a Universal Source Connector data mart, select the Refresh Options tab.


New Data Mart
General
Refresh Options
USC Definition
Publications
Use incremental refresh
Process deleted records
When checked, records deleted from the source system are deleted from The Information Edge during an incremental refresh. If unchecked, deleted records are removed only during a full refresh.
Rebuild indexes
When checked, indexes are rebuilt during an incremental refresh. Uncheck this option only if your incremental refreshes typically include a relatively small number of records.
Cancel
< Back
Next >
Finish

2. After you install a data mart, you can refresh the data in it manually any time or automatically at scheduled times. If you want to refresh all records in the data mart, leave the **Use incremental refresh** checkbox unmarked. If you want to refresh only records that have changed since the last time you processed the data, mark the checkbox (this is the faster of

the two options). In addition to marking this checkbox, you will need to set certain properties in your data mart definition that enable incremental refreshes in your custom data marts. For more information, see "Incremental Refresh in Universal Source Connector Data Marts" on page 255.

3. When you mark the **Process deleted records** checkbox, records deleted from the source system since the last time the mart was processed are deleted from ***The Information Edge*** during an incremental refresh. If you unmark the checkbox, deleted records are removed only during full refreshes.

   Marking the checkbox ensures that your ***Information Edge*** data always reflects the current data in ***The Raiser's Edge***. For example, if you have a constituent who gave three gifts and you compute an average, if one of the gifts is deleted in ***The Raiser's Edge*** and you do not mark this checkbox, the deleted gift would still be factored into the average in ***The Information Edge*** so the figure would no longer be correct. However, identifying deleted records is time consuming. If you typically do not have many deleted records in your ***Raiser's Edge*** data, you will probably want to unmark the checkbox to reduce the processing time of your data marts during incremental refreshes.

   If you ever specify a different data source for a data mart, you should perform a full refresh on the mart.

4. When you mark the **Rebuild indexes** checkbox, indexes are dropped and then rebuilt during an incremental refresh. You should leave this checkbox marked unless your incremental refreshes typically include a relatively small number of records.

   When you mark the checkbox, indexes are dropped before processing. With the indexes dropped, data inserts are faster, but all the indexes must be rebuilt. Without dropping them, inserts are slower, but you save the time needed to rebuild the indexes.

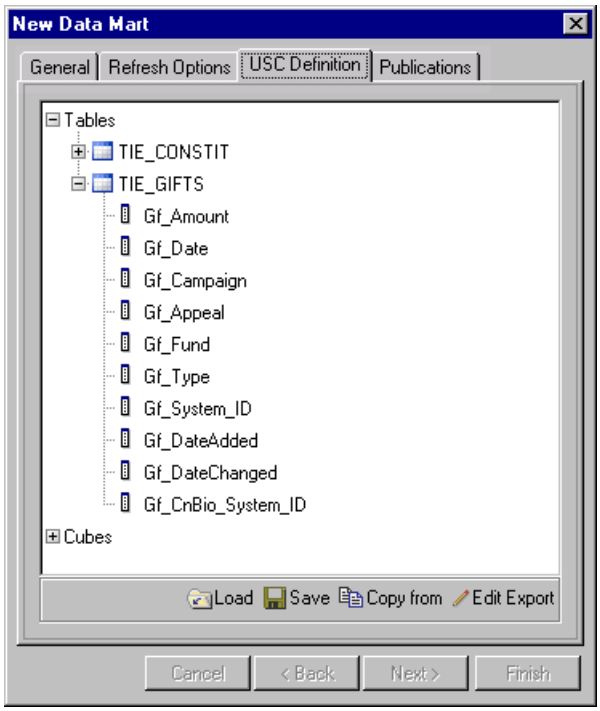
   Even when **Rebuild indexes** is not marked, you may see an "Adding Indexes status" message during a data mart refresh. The status almost always displays while the system checks to see whether any indexes are missing.

5. If you are creating a new custom data mart, click **Next** to access the USC Definition tab. For more information about this tab, see the next procedure.

   If you are editing the properties of an existing data mart, click **OK** to save your changes and exit the properties tabs.

➢ Completing the Universal Source Connector USC tab

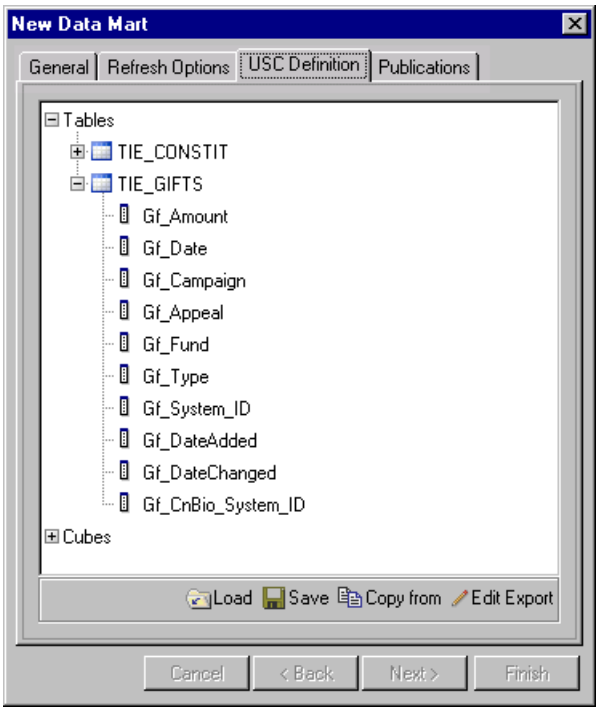
1. While creating or editing a Universal Source Connector data mart, select the USC tab.



2. To create a data mart using ***The Information Edge XML Editor***, click **Edit Export**. The XML Editor appears. For information about using the XML Editor, see "Creating an XML file in the XML editor" on page 222.

   If you have already created an XML file to define a custom data mart, click **Load** and browse to the XML file. Select the file and it appears in the **XML Data Mart Definition** box.

Additionally, if you have already created a custom data mart you want to tweak to create another data mart, you can click **Copy From**. The Copy XML Data Mart Definition screen appears listing the available marts from which you can copy an XML definition. Select a mart and click **OK**. The tables and cubes defined in the data mart now appear in the box.



You can click **Save** to specify a name and location to save your data mart definition XML file.

3. If you are creating a new custom data mart, click **Next** to access the Publications tab. For more information about this tab, see the next procedure.

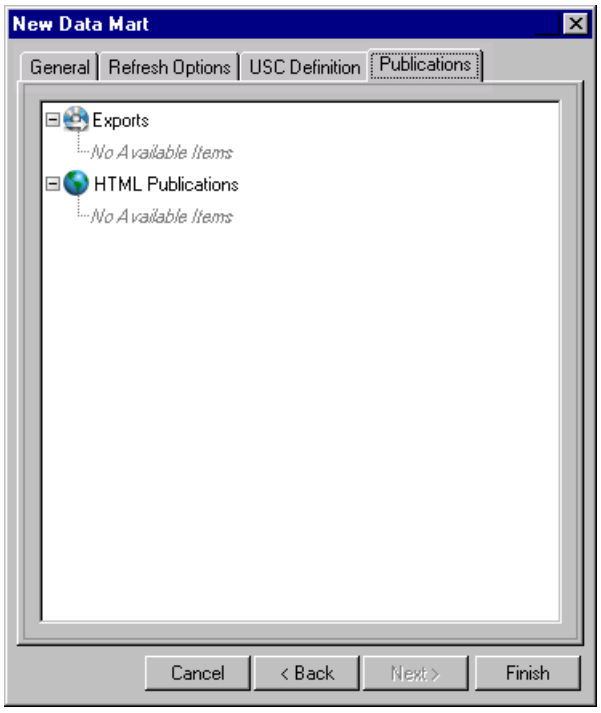
   If you are editing the properties of an existing data mart, click **OK** to save your changes and exit the properties tabs.

4. If for any reason your XML file is not valid against the BIPACKAGEDEFINITION.XSD schema, a message appears with details about the problem. For more information about this schema, see “XML Schema Reference” on page 241.

5. If loading the file takes an excessive amount of time, you may need to set the noIndex property to true for some of your fields. For more information, see the following section.

➢ Completing the Universal Source Connector Publications tab

1. While creating or editing a Universal Source Connector data mart, select the Publications tab.



   If you are creating a new data mart, no items are available for processing yet. If you are editing an existing data mart, any exports and HTML Publications you have created are available as checkboxes. Specify which of these items you would like to process automatically when the data mart is processed.

   When you create exports or HTML Publications on a client machine, you can specify an output path on the client machine. However, because the Schedule function runs on the server, it attempts to output the HTML Publication or export to the specified output path on the server. If the path does not exist on the server, the HTML Publication or Export fails.In this case, you need to create the same path on the server to enable the export or HTML Publication to process.

2. If you are editing the properties of an existing data mart, click **OK** to save your changes and exit the properties tabs. If you are creating a new data mart, click **Finish** to install the data mart.

   A message informs you when the data mart is successfully installed. It then appears in the tree view.

The Information Edge XML Editor

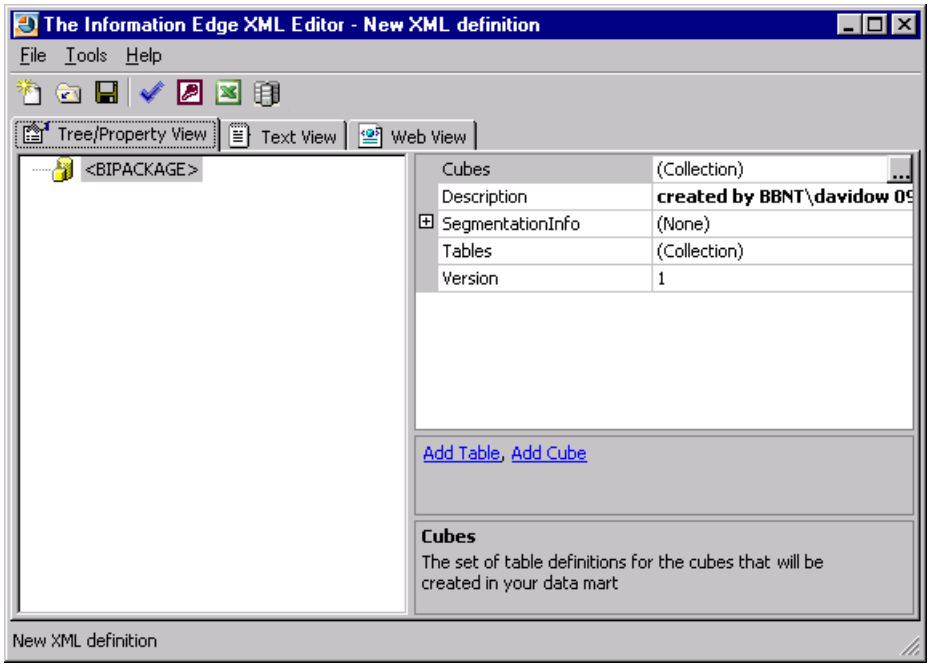
The *Universal Source Connector* includes ***The Information Edge XML Editor*** to assist you in creating custom data marts. The XML editor includes several key features.

- **Access Database Wizard** - this wizard enables you to create XML files from *Access* databases.
- **Excel Wizard** - this wizard enables you to create XML files from *Excel* spreadsheets.
- **OLEDB Data Source Wizard** - this wizard enables you to create XML files from any OLEDB source available to your computer.
- **Validator** - You can easily ensure that your XML conforms to ***The Information Edge*** schema.

Accessing the XML Editor

You can access the ***The Information Edge XML Editor*** by clicking the **Edit XML** button on the Enter XML Data Mart Definition screen when installing a Universal Source Connector data mart.

Additionally, because the XML Editor is a separate utility with its own executable file, you can work in it independently of ***The Information Edge***. The executable is located in the "bin" folder of your ***Information Edge*** installation. On your *Windows* taskbar, right-click on **Start**, select **Explore**, and browse to the Program Files\Blackbaud\The Information Edge\bin folder (or the location where you installed ***The Information Edge***) and double-click XMLEdit.exe. The Information Edge XML Editor screen appears.



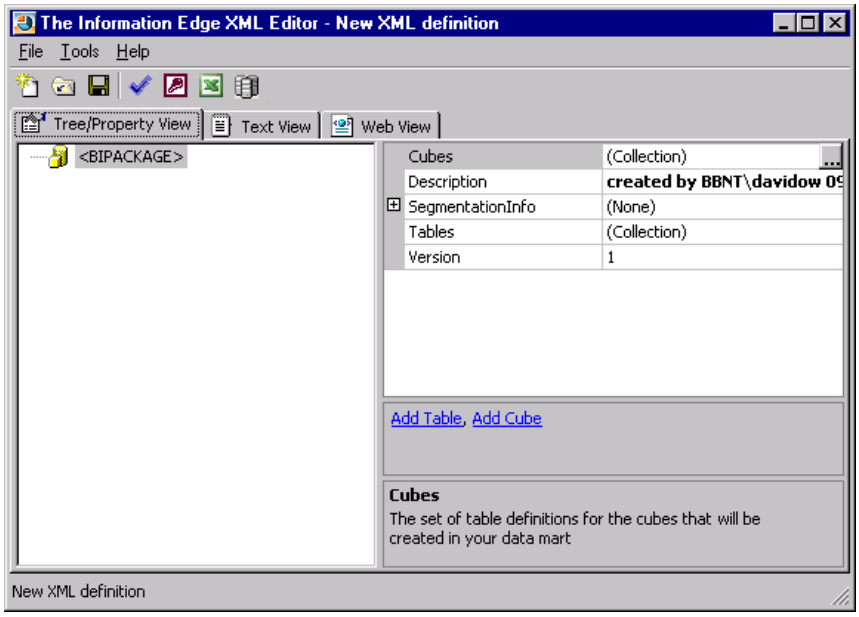
Using The Information Edge XML Editor

The XML in your files must be well formed, meaning it must comply with constraints such as the correct use of markup syntax.

When creating XML files to define data marts, a key point to consider is that the XML must conform to the BIPACKAGEDEFINITION.XSD schema (included with ***The Information Edge*** and available in the "The Information Edge\BIN" folder). When you create an XML file using ***The Information Edge XML Editor***, the schema supplied with ***The Information Edge*** is automatically attached to the file and used to verify that each item of content in your XML file adheres to the description of the element in which the content is to be placed. The XML is validated against this schema.

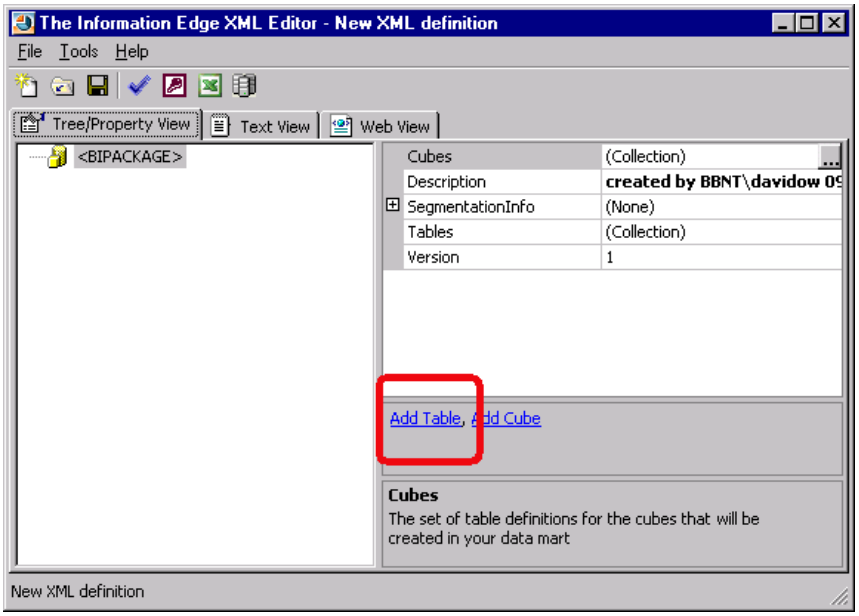
➢ Creating an XML file in the XML editor

1. From The Information Edge XML Editor menu bar, select **File**, **New**. If you already have a file open, you are asked whether you want to discard any current edits. The Tree/Property View tab appears showing the <BIPACKAGE> element.

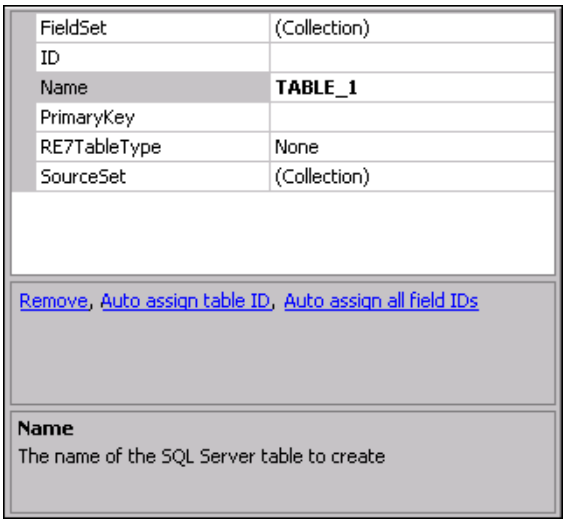


The <BIPACKAGE> element is parent to all the elements that define the tables and fields from your data source. The default information is based on the BIPACKAGEDEFINITION.XSD schema included with ***The Information Edge***.

2. You can add items to the file individually or in collections. To add a single new table to the file, click **Add Table**.



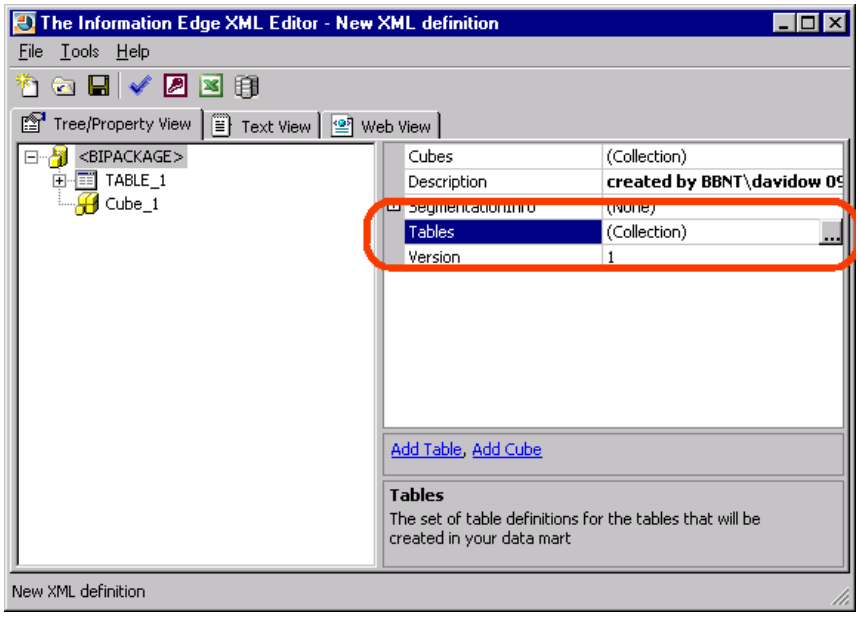
3. The new table appears in the tree view on the left. When you select the table, the data grid on the right changes to show the features for your new table.



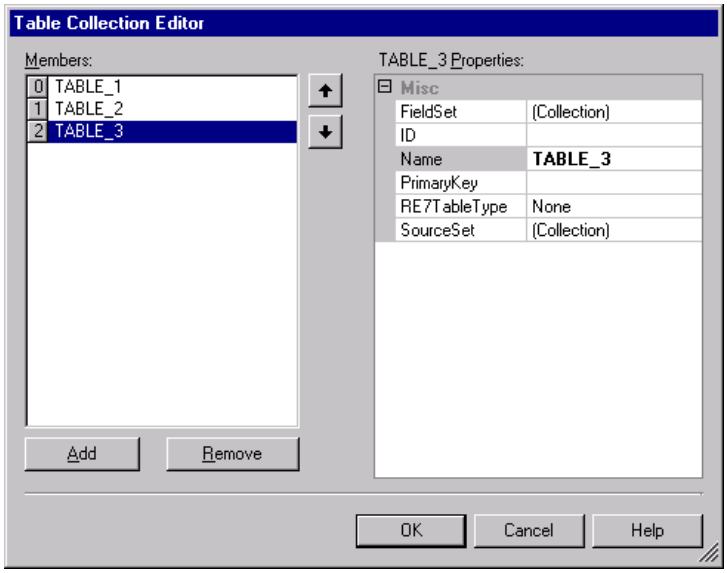
4. To learn more about the items in this grid, see “TABLE” on page 243.
5. You can click links to **Auto assign table ID** and **Auto assign all field IDs**. Before using these options, you should define your table and field names because the IDs will be based on those names, and will be available in several dropdowns in other areas of the editor.

At any time you can click the Text View and Web View tabs to change the view of the file you are editing or creating. Additionally, you can type directly into the Text View tab display pane. However, any comments or processing instructions you add to your file in Text View (or in another editor) are disregarded by ***The Information Edge XML Editor***. For example, if you add a comment in Text View, then select another view, when you return to Text View, the comment does not appear.

6. You can also add collections of tables at the same time. Select <BIPACKAGE> in the tree view. In the right pane, select the **Tables** row.

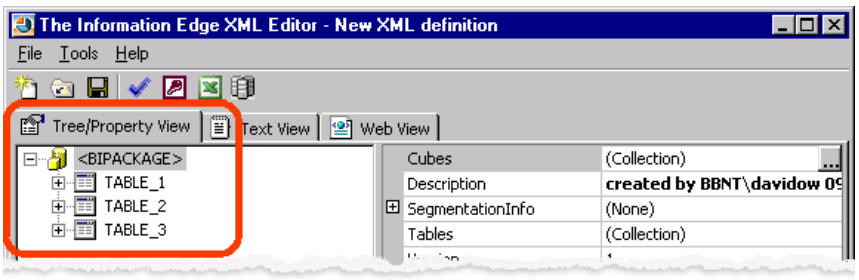


7. Click the ellipses beside "(Collection)" in the **Tables** row. The Table Collection Editor screen appears.



8. Click **Add** to add tables to the collection. You can specify properties for each table you include in the collection. For more information about table properties, see "TABLE" on page 243.

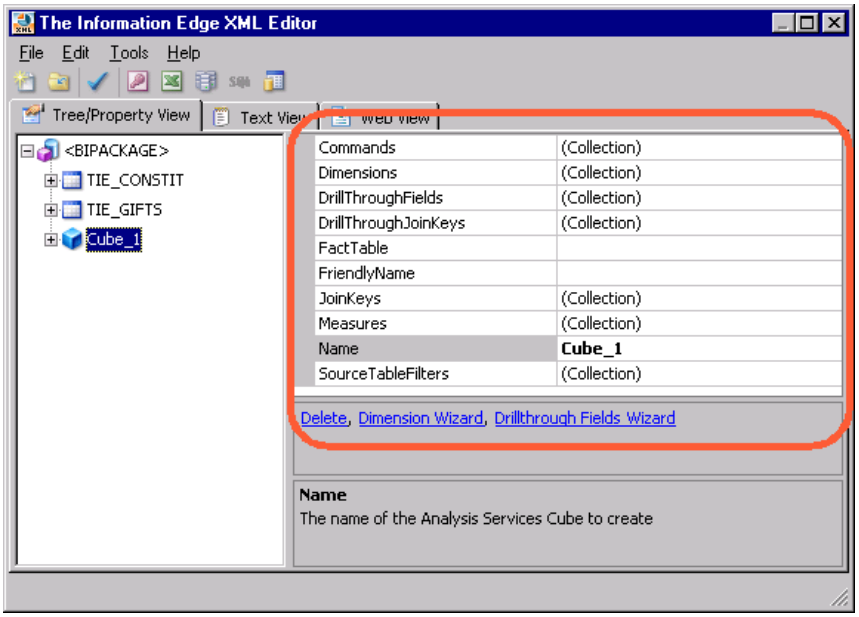
9. When you finish adding tables and defining properties for them, click **OK**. You return to the editor where your table collection now appears.



   You can also add collections of FIELDSET and SOURCESET objects for individual tables. For more information about the properties of these items, see “FIELDSET” on page 244 and “SOURCESET” on page 245.

10. You can add cubes to the data mart by selecting <BIPACKAGE> in the tree view, and selecting the **Add Cube** link on the right. The cube appears in the tree view.

11. To specify properties for the cube, select it. The property options appear on the right.



12. You can add collections of properties for the cube in the same way you add them to tables. For more information about cube properties, see “CUBE” on page 251.

13. When you are finished creating your XML file, select **File**, **Save as** from the menu bar and specify the name of your file and the location where you want to save it.

    The XML files created in the ***The Information Edge XML Editor*** have a hard-coded path to the data source (for example, “Source=E:\MyFolder\MyDB.MDB”). If you attempt to process a data mart from a computer that does not have MyDB.MDB at the specified location, an error message appears. The solution is to share the folder

At any point, you can press **F5** on your keyboard to check the validity of your XML file. If the file is not valid, a message will inform you of the location of the trouble area. For more information, see “Validating XML Files” on page 240.

where the database resides and manually edit the XML to change the Source location to use the computer name as part of a full UNC path (for example, “Source=\\MyServer\MyFolder\MyDB.MDB”). This enables the data mart to be processed from any client computer with access to “\\MyMachine\MyFolder.”

14. You can now access this file from the Enter XML Data Mart Definition screen when you add a custom data mart. For more information, see “Adding a Universal Source Connector data mart” on page 215.

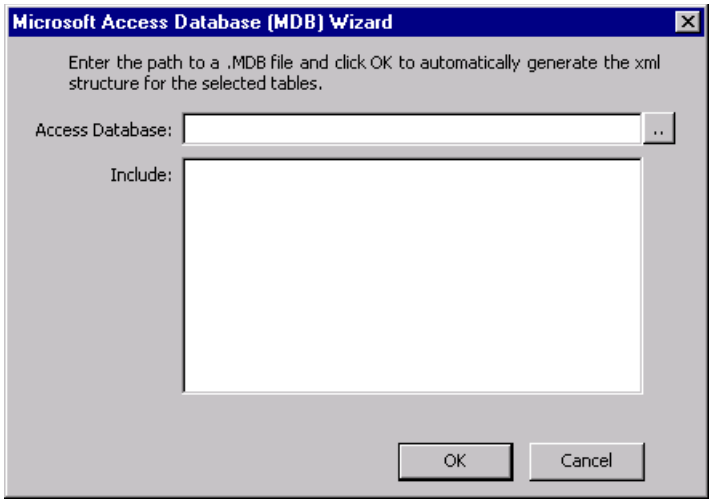
Microsoft Access Database Wizard

The Microsoft Access Database Wizard helps you to create XML files from *Access* databases. These XML files can then be imported into ***The Information Edge*** as data marts using the *Universal Source Connector*.

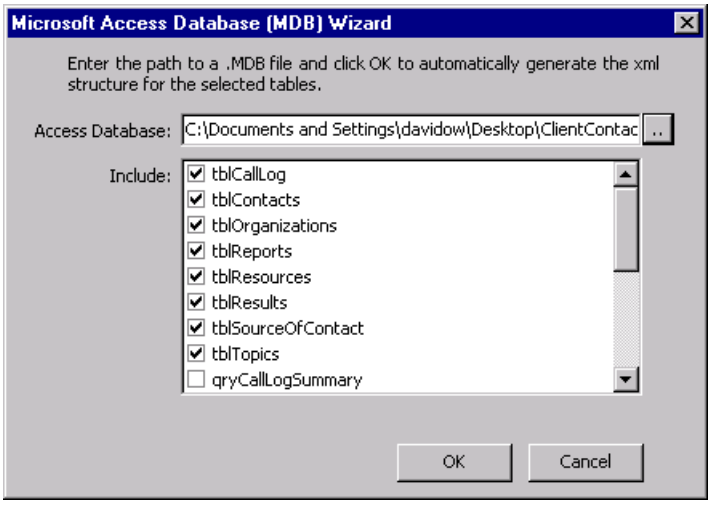
Before you create an XML file from your *Access* database, we recommend you establish as much information as possible in the database. For example, the Access Wizard recognizes any existing Primary Keys as well as defined relationships between tables in the *Access* database, so it is a good idea to specify as much of this information as possible in the database before running the wizard.

➢ Creating a data mart from an Access database

1. From the ***Information Edge XML Editor*** **Tools** menu, select **Access .MDB Wizard**. The Access .MDB Wizard screen appears.

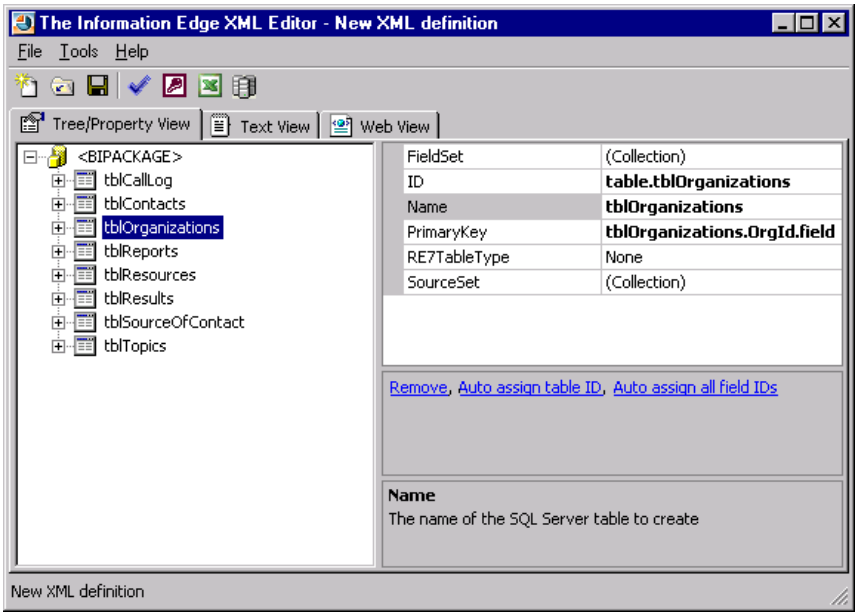

Microsoft Access Database (MDB) Wizard
Enter the path to a .MDB file and click OK to automatically generate the xml structure for the selected tables.
Access Database:
..
Include:
OK
Cancel

2. In the **Access Database** field, browse to the location of the *Access* database you want to bring into ***The Information Edge***. After you select a database, you return to the Wizard and the database tables now appear in the **Include** field.



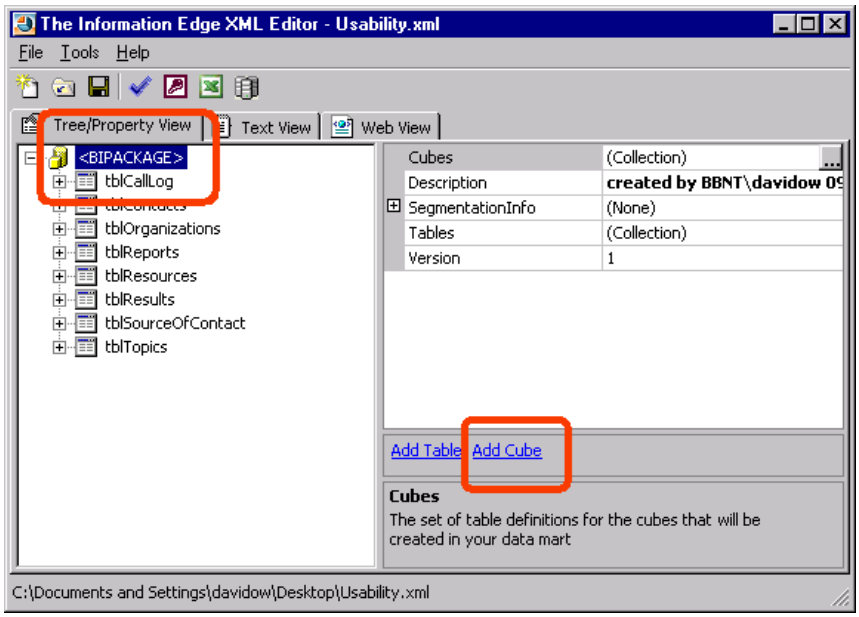
3. All tables default as marked (to be included in the data mart). If you do not want any tables to be included in the data mart, unmark the checkboxes by them.

4. Click **OK**. You return to the ***Information Edge XML Editor*** and the selected tables now appear in the tree view.



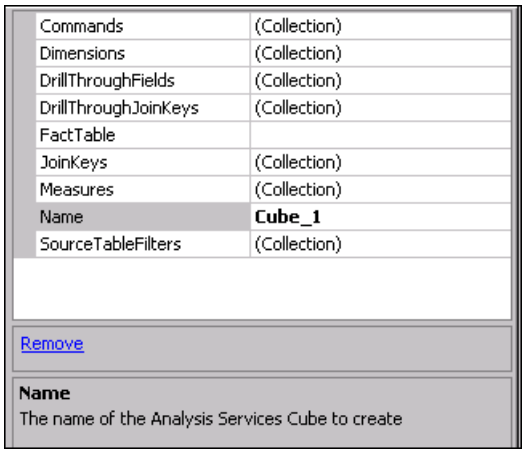
Now you can build the cubes that will make up your data mart.

5. In the tree view select <BIPACKAGE>.



6. Select **Add Cube** on the right. The new cube appears in the tree view.
7. Select the new cube in the tree view and the properties for it become available on the right.

You can also add a collection of cubes by clicking the ellipses in the **Cubes** row of the data grid on the right.

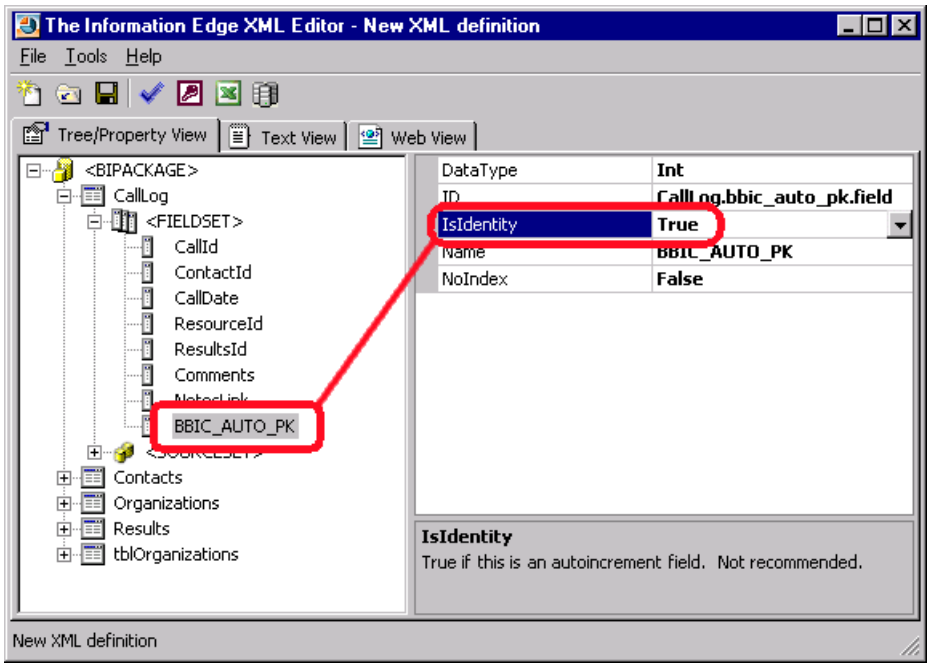


8. Specify the properties for the cube. For more information about these properties, see “CUBE” on page 251.
9. When you are finished creating your XML file, select **File**, **Save as** from the menu bar and specify the name of your file and the location where you want to save it.
10. You can now access this file from the USC Definition tab when you add a custom data mart. For more information, see “Adding a Universal Source Connector data mart” on page 215.

Primary Keys and the Access Wizard

Before using the Access Wizard to create an XML file from a database, it is best if every table has a unique Primary Key in the source data. This is a unique ID for a particular row in the source data.

The Access Wizard in the XML Editor recognizes existing Primary Keys in the *Access* database. However, in the event that a table does not have a Primary Key, a **BBIC_AUTO_PK** field is added to the table.



The **BBIC_AUTO_PK** field is the last field in the list of fields for the table, and the SELECT statement should not include a column for this field. (If n fields are defined, **BBIC_AUTO_PK** must be the nth+1 field, and the SELECT statement must only contain n columns). The IsIdentity property is set to true for the **BBIC_AUTO_PK** field.

When there is no true Primary Key in the source and if you do not want to use the **BBIC_AUTO_PK** field, you can remove the **BBIC_AUTO_PK** field and set the "IsIdentity" property to "True" for another field to indicate that it should be used as the Primary Key for a table. The field should be the last field in the list of fields for the table, and it should not be included in the SELECT statement. For example, if you have three fields in a table, the Primary Key should be the last field, and only the first two should be included in the SELECT statement. You may want to use concatenation to create a Primary Key. For example, you may want to concatenate First name, Last name, and Zip Code to achieve a unique value for the Primary Key.

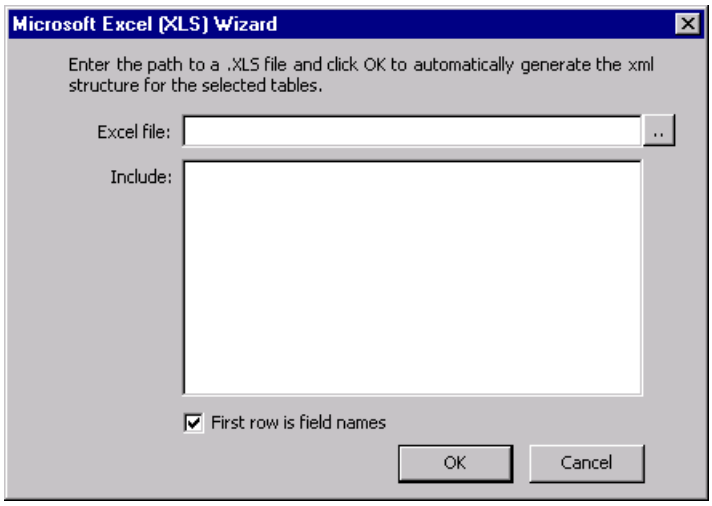
Primary Key fields should contain data that does not change when the data is refreshed because several ***Information Edge*** functions, such as Snapshot tables, are dependant upon the Primary Key being the same forever.

Microsoft Excel Wizard

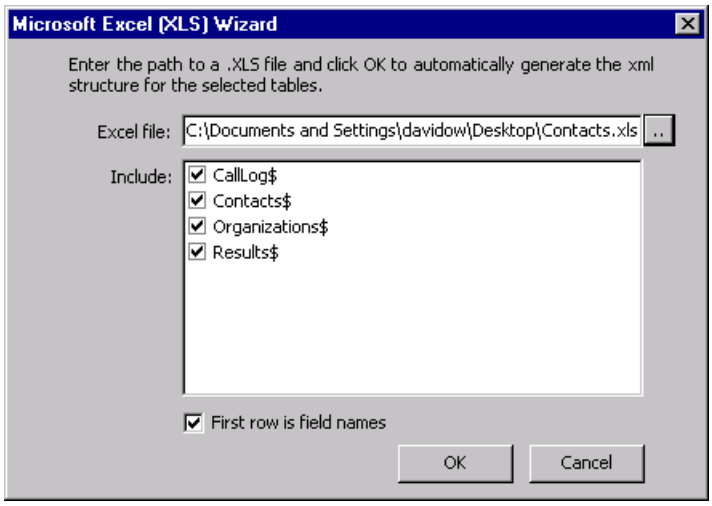
The Microsoft Excel Wizard helps you to create XML files that are optimized for data analysis from your *Excel* spreadsheets. These XML files can then be imported into ***The Information Edge*** as data marts using the *Universal Source Connector*.

➢ Creating a data mart from an Excel spreadsheet

1. From the ***Information Edge XML Editor*** **Tools** menu, select **Excel Wizard**. The Excel .XLS Wizard screen appears.


Microsoft Excel (XLS) Wizard
Enter the path to a .XLS file and click OK to automatically generate the xml structure for the selected tables.
Excel file:
..
Include:
First row is field names
OK
Cancel

2. In the **Excel File** field, browse to the location of the *Excel* file you want to bring into ***The Information Edge***. After you select a file, you return to the Wizard and the *Excel* file now appears in the **Include** field.

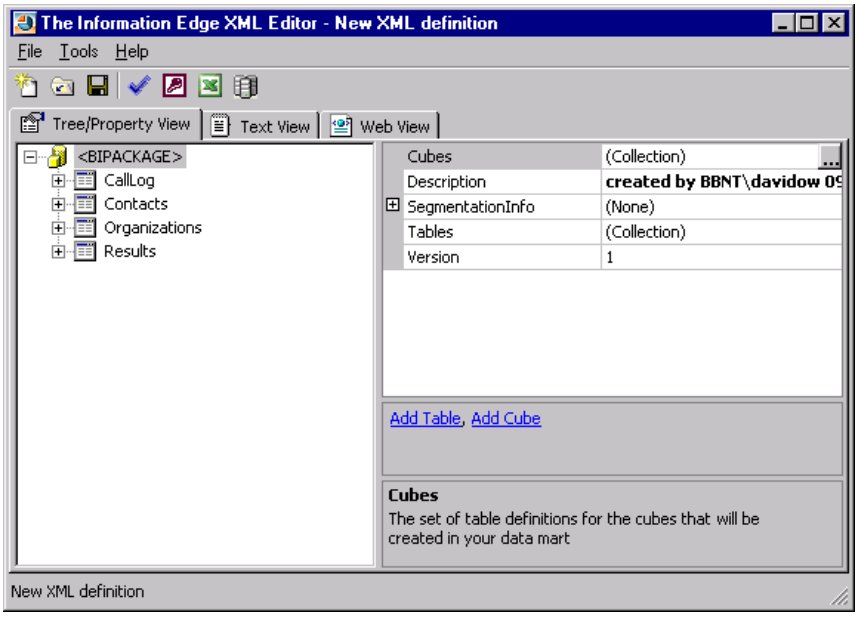


3. Leave the **First row is field names** checkbox marked to indicate that the first row of the spreadsheet contains the names of fields rather than data.

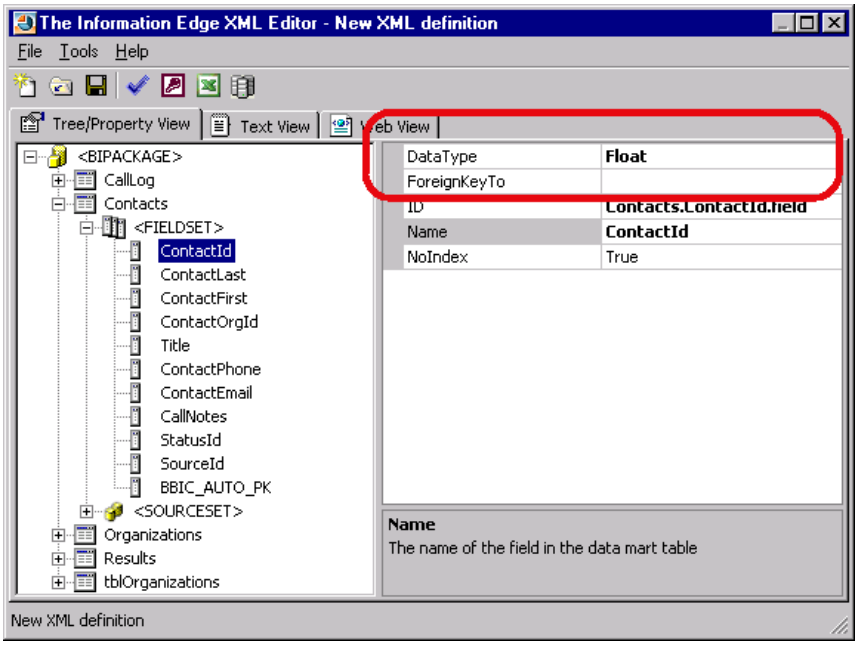
4. All worksheets in the spreadsheet default as marked (to be included in the as tables in the data mart). If you do not want any sheets to be included in the data mart, unmark the checkboxes by them.

If you use named ranges in an *Excel* spreadsheet, the ranges appear as separate worksheets.

5. Click **OK**. You return to the ***Information Edge XML Editor*** and the selected worksheets now appear as tables in the tree view.



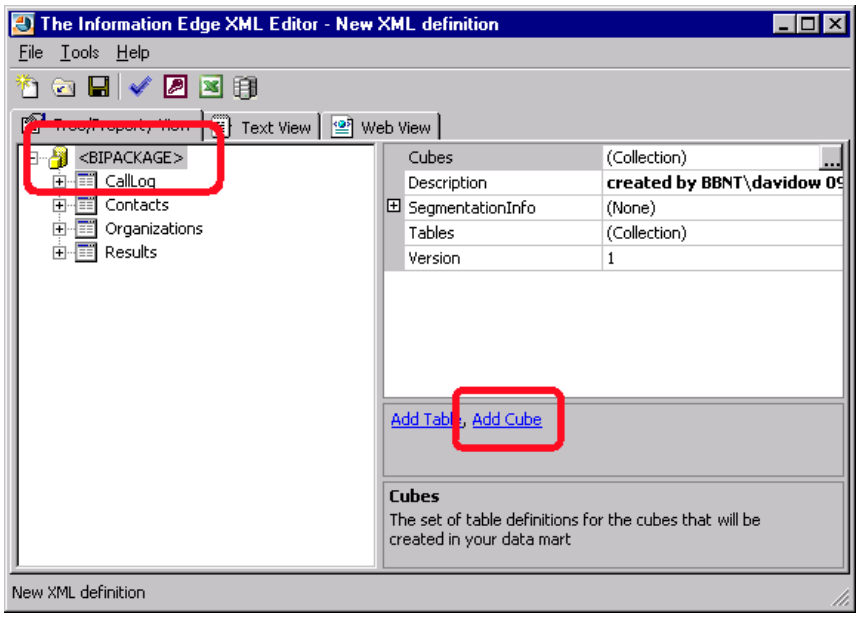
6. Depending on the properties of your spreadsheet, you may need to change the data type for some fields. In the tree view, click the plus sign to expand a table and click **<FIELDSET>**. You can then select a field to view its properties.



The Information Edge makes assumptions about the data type of each field based on the first few rows of the *Excel* file. If, for example, a field has integers for the first few rows, but includes strings in other rows, an error will occur when the data mart is refreshed. Other combinations of data types may also cause errors. To avoid this, for fields that include values of different types, you must select a **Data Type** that includes all the values.

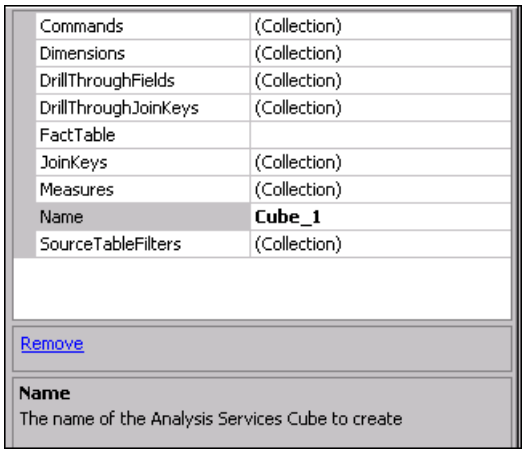
For more information about the available data types, see your *SQL Server* documentation.

7. Now you can build the cubes that will make up your data mart. In the tree view select <BIPACKAGE>.



You can also add a collection of cubes by clicking the ellipses in the **Cubes** row of the data grid on the right.

8. Select **Add Cube** on the right. The new cube appears in the tree view.
9. Select the new cube in the tree view and the properties for it become available on the right.

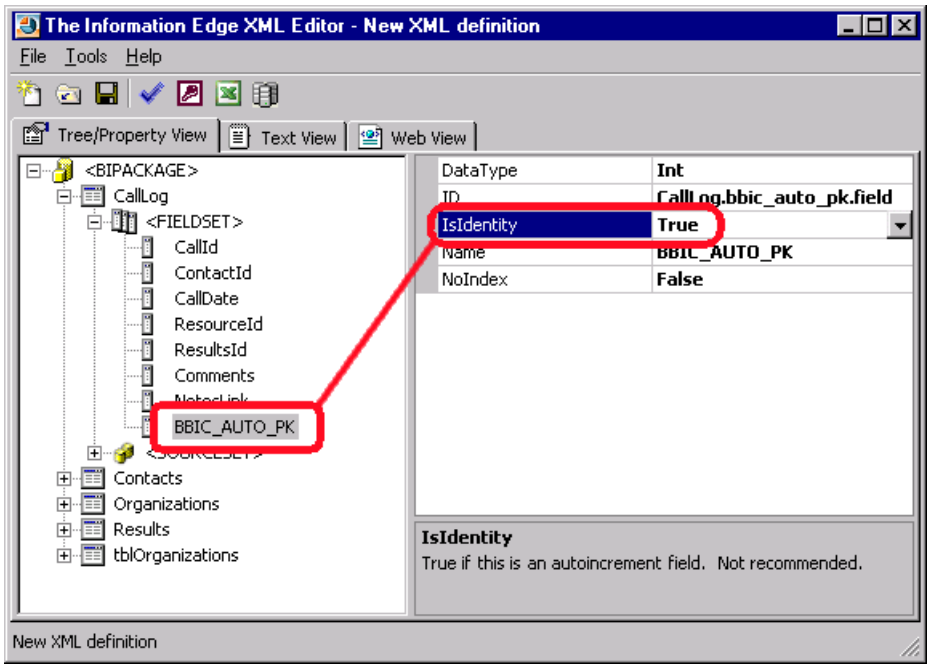


10. Specify the properties for the cube. For more information about these properties, see “CUBE” on page 251.

11. When you are finished creating your XML file, select **File**, **Save as** from the menu bar and specify the name of your file and the location where you want to save it.
12. You can now access this file from the USC Definition tab when you add a custom data mart. For more information, see "Adding a Universal Source Connector data mart" on page 215.

Primary Keys and the Excel Wizard

When you use the Excel Wizard in the XML Editor, a Field named **BBIC_AUTO_PK** is added to each table. The "IsIdentity" property for this field is set to TRUE, so the field will auto increment and it is marked as the Primary Key for the table. This is done so you do not have to manually create a Primary Key for each table.



The **BBIC_AUTO_PK** field is the last field in the list of fields for the table, and the SELECT statement should not include a column for this field. (If n fields are defined, **BBIC_AUTO_PK** must be the nth+1 field, and the SELECT statement must only contain n columns). The IsIdentity property is set to true for the **BBIC_AUTO_PK** field.

When there is no true Primary Key in the source and if you do not want to use the **BBIC_AUTO_PK** field, you can remove the **BBIC_AUTO_PK** field and set the "IsIdentity" property to "True" for another field to indicate that it should be used as the Primary Key for a table. The field should be the last field in the list of fields for the table, and it should not be included in the SELECT statement. For example, if you have three fields in a table, the Primary Key should be the last field, and only the first two should be included in the SELECT statement. You may want to use concatenation to create a Primary Key. For example, you may want to concatenate First name, Last name, and Zip Code to achieve a unique value for the Primary Key.

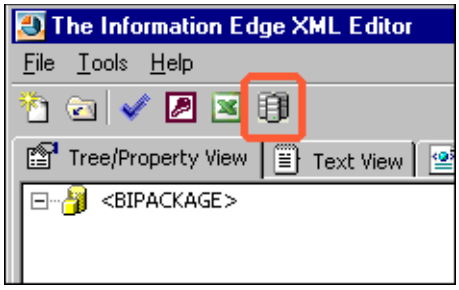
Primary Key fields should contain data that does not change when the data is refreshed because several ***Information Edge*** functions, such as Snapshot tables, are dependant upon the Primary Key being the same forever.

Microsoft OLEDB Data Source Wizard

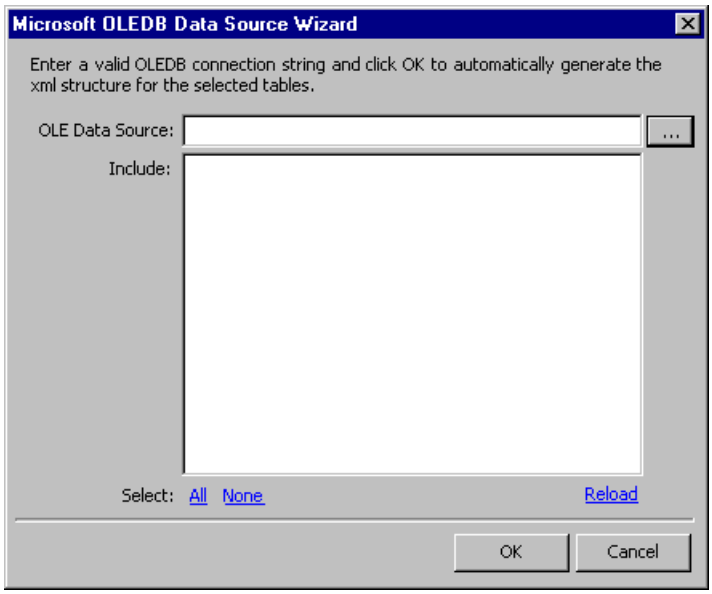
You can use the Microsoft OLEDB Data Source Wizard to easily pull data into the XML Editor from any OLEDB source available on your computer. The wizard is available from the editor toolbar or **Tools** menu.

➢ **Creating a data mart with the OLEDB Data Source Wizard**

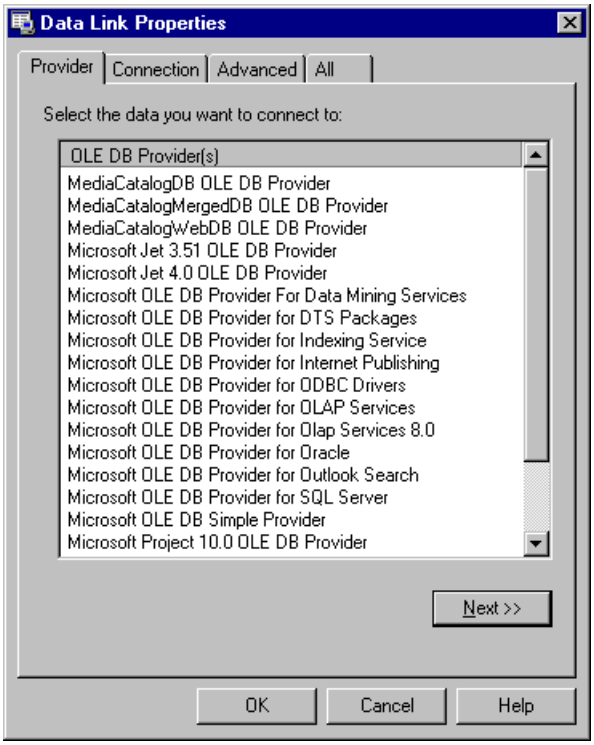
1. From the ***Information Edge XML Editor*** **Tools** menu, select **OLEDB Wizard** or from the toolbar click the **OLEDB Wizard** button.



2. When you click the button, the Microsoft OLEDB Data Source Wizard screen appears.

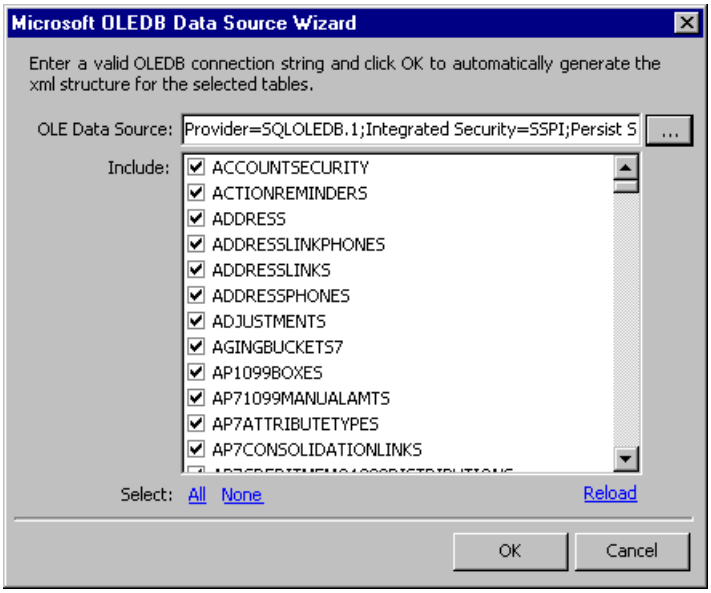


3. Click the Browse button beside the **OLE Data Source** field to access the Data Links Properties tabs.

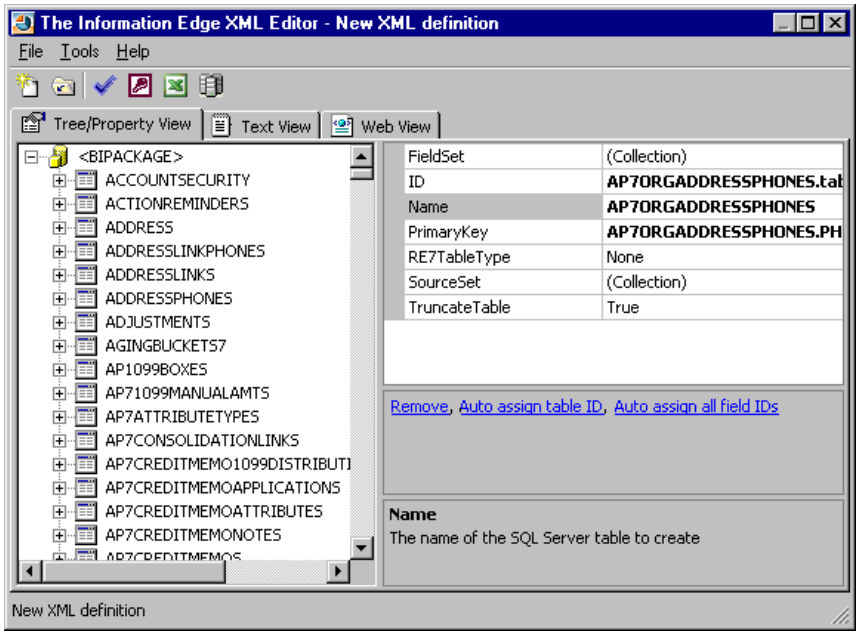

Data Link Properties
Provider
Connection
Advanced
All
Select the data you want to connect to:
OLE DB Provider(s)
MediaCatalogDB OLE DB Provider
MediaCatalogMergedDB OLE DB Provider
MediaCatalogWebDB OLE DB Provider
Microsoft Jet 3.51 OLE DB Provider
Microsoft Jet 4.0 OLE DB Provider
Microsoft OLE DB Provider For Data Mining Services
Microsoft OLE DB Provider for DTS Packages
Microsoft OLE DB Provider for Indexing Service
Microsoft OLE DB Provider for Internet Publishing
Microsoft OLE DB Provider for ODBC Drivers
Microsoft OLE DB Provider for OLAP Services
Microsoft OLE DB Provider for Olap Services 8.0
Microsoft OLE DB Provider for Oracle
Microsoft OLE DB Provider for Outlook Search
Microsoft OLE DB Provider for SQL Server
Microsoft OLE DB Simple Provider
Microsoft Project 10.0 OLE DB Provider
Next >>
OK
Cancel
Help

4. To learn more about the information you must enter to complete these tabs, click the **Help** button on the lower right of the screen.

5. When you are finished specifying the data link properties, click **OK**. You return to the Microsoft OLEDB Data Source Wizard screen which now includes an OLEDB connection string in the **OLE Data Source** field, and the tables from that source in the **Include** box.



6. A checkbox appears for each table in the data source. You can mark or unmark the checkboxes by clicking **All** or **None**. Click **Reload** to refresh the list of tables.
7. After you select the tables you want to include in the XML Editor, click **OK**. You return to the editor where the information from the data source now appears.



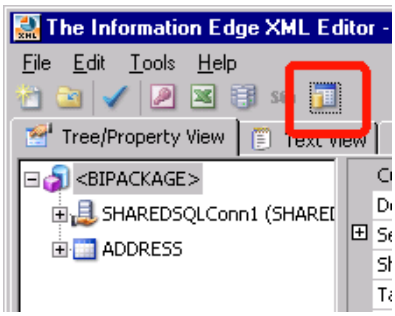
8. When you are finished creating your XML file, select **File**, **Save as** from the menu bar and specify the name of your file and the location where you want to save it.
9. You can now access this file from the USC Definition tab when you add a custom data mart. For more information, see “Adding a Universal Source Connector data mart” on page 215.

Microsoft SQL Server Wizard

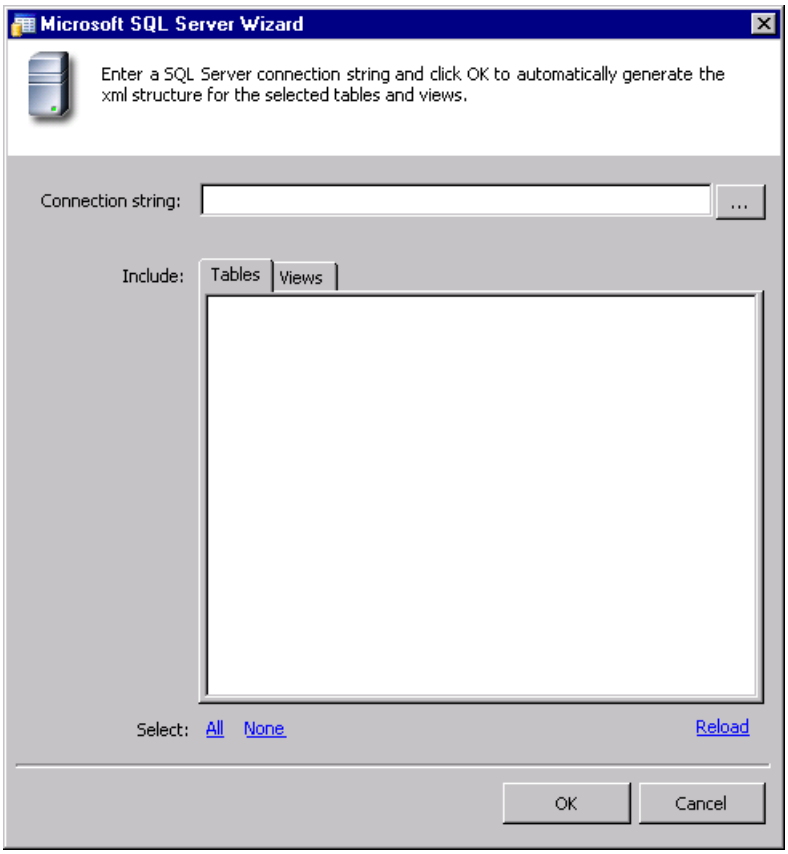
You can use the Microsoft SQL Server Data Source Wizard to easily pull data into the XML Editor from any SQL Server source available on your computer. The wizard is available from the editor toolbar or **Tools** menu.

➢ Creating a data mart with the SQL Server Wizard

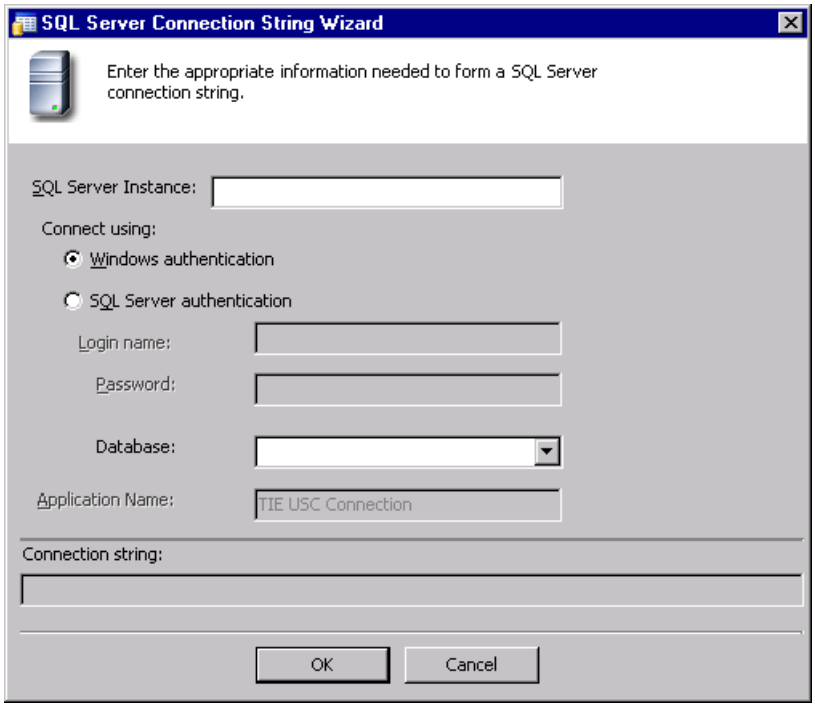
1. From the ***Information Edge XML Editor*** **Tools** menu, select **SQL Server Wizard** or from the toolbar click the **SQL Server Wizard** button.



2. When you click the button, the Microsoft SQL Server Wizard screen appears.



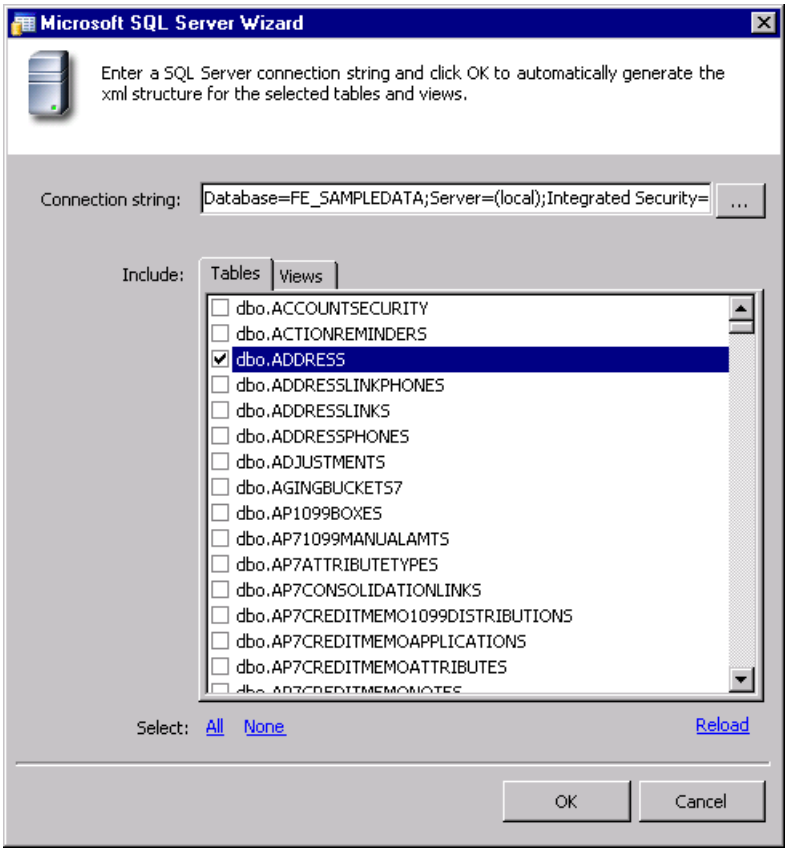
3. To locate a particular SQL Server database, click the ellipses button beside the **Connection string** field. The SQL Server Connection String Wizard screen appears.



4. Specify the **SQL Server Instance** on which the database is located, the authentication information that ***The Information Edge*** will use to connect to the database, and the name of the database.

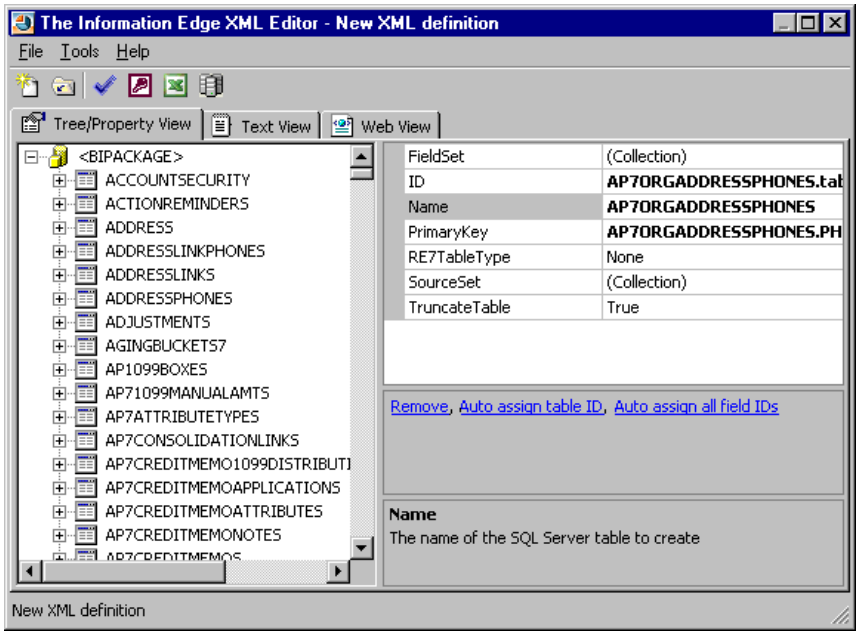
   As you add information, the connection string appears at the bottom of the screen.

5. Click OK to return to the Microsoft SQL Server Wizard screen, where the connection string now appears.



6. If the connection string is valid, the Tables and Views tabs include all those items from the selected database. Mark the checkboxes by any tables and views you want to include in your Universal Source Connector data mart.

7. After you select the tables and views you want to include in the XML Editor, click **OK**. You return to the editor where the information from the data source now appears.

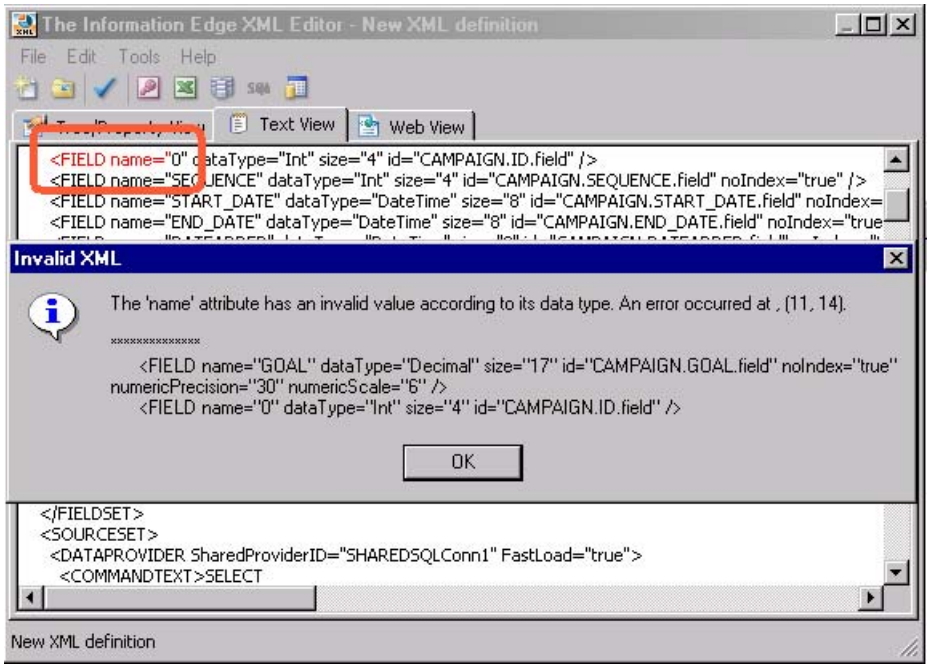


8. When you are finished creating your XML file, select **File**, **Save as** from the menu bar and specify the name of your file and the location where you want to save it.
9. You can now access this file from the USC Definition tab when you add a custom data mart. For more information, see “Adding a Universal Source Connector data mart” on page 215.

Validating XML Files

At any point while working in ***The Information Edge XML Editor*** you can press **F5** or click the Validate toolbar button (check mark) to ensure your XML file is valid against ***The Information Edge*** schema. If the file is not valid against the schema, an error message appears that includes the context of the error. You are taken to the offending XML on the Text View tab of the editor.

For example, below a field has a name “0” which is not a valid field name. The error message includes the context of the bad XML and the error is highlighted in red on the Text View tab.



This XML Editor performs a less strict validation than that performed by ***The Information Edge*** when the file is actually brought into the program. A file that is valid when checked in the editor may in a few circumstances not be valid when actually imported into ***The Information Edge***. For example, the XML Editor cannot know if a data source for ***The Information Edge*** exists. If an XML file references a data source that is no longer valid (perhaps a data mart was deleted), the file will show as valid in the XML Editor, but will not be valid when imported into ***The Information Edge***.

XML Schema Reference

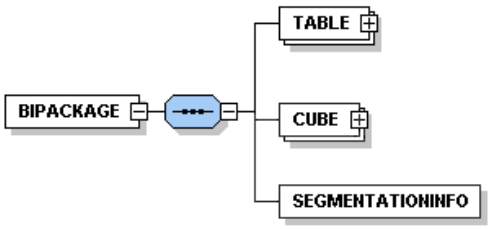
This reference contains information about the elements contained in the BIPACKAGEDEFINITION.XSD schema. For information about XML authoring and schema in general, a wide variety of tutorials are available on the Web. A good place to start is http://www.w3schools.com/xml/xml_whatis.asp. The w3 group created the XML specification. The elements in this schema are used when you create an XML file in ***The Information Edge XML Editor***.

The term “packages” appears in several areas of the schema because in early versions of ***The Information Edge***, data marts were called packages.

BIPACKAGE

You can add a **Version** and **Description** to the BIPACKAGE element to help track your definition file.

This element is parent to all the elements that define the tables and fields from your data source. The hierarchy appears as follows:



BIPACKAGE Attributes	Comments
Cubes	For more information, see “CUBE” on page 251.
Description	You can optionally provide a description of this definition
SegmentationInfo	For more information, see “SEGMENTATIONINFO” on page 254.
SharedProviders	You can specify one or more elements that contain a connectionstring and then reference those by name in the <DATAPROVIDER> element. This makes it easier to move a USC to different servers/sources because you can just make a change to a single connection string in one place. In addition to the ConnectionString, you can also specify the CurrentTimeStampSQL and TimeStampFormat for incremental refreshes since these are usually the same for a given source regardless of the CommandText being used to load the table.
Tables	For more information, see “TABLE” on page 243.
Version	You can optionally provide a number to help you keep track of different versions of this definition

TABLE

Used to define the tables from your data source that will be pulled into ***The Information Edge***. Parent to the FIELDSET and SOURCESET elements which specify the data fields and their sources.

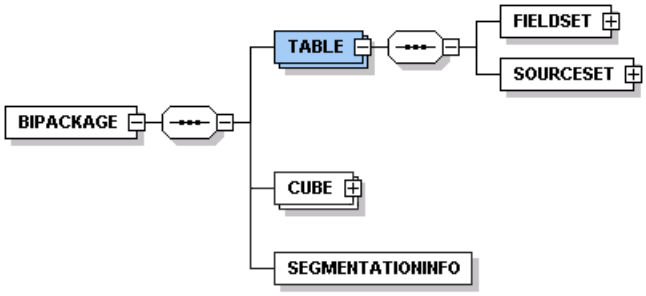


TABLE Attributes	Comments
FriendlyName	Supports the View Friendly Name feature. The ***Information Edge XML Editor*** can auto generate Friendly Field Names. FriendlyName is available on all <FIELDSET>, <MEASURE>, and <DIMENSION> elements.
Hidden	Specifying True indicates the table definition should be hidden from ***The Information Edge*** user interface.
Name	Name of table
PrimaryKey	Unique identifier
ID	Unique identifier for this table. The ***Information Edge XML Editor*** can auto assign table IDs.
Re7TableType	Identifies the table as having a specific type of ***Raiser's Edge*** record. Can use Re7TableTypeEnum to specify a value of "Constituent", "Gift", or "None".
StagingTable	Specifying this attribute as "True" means that the table will not be visible in the user interface and enables a second attribute TruncateAfterRefresh.
TruncateAfterRefresh	This attribute is available only when StagingTable=True and it defaults to True. When True, it indicates that after a refresh has completed, the staging table should be truncated and all data removed from the table. For a true staging table this will typically be the case. However, in advanced Extract, Transform, and Load processes you may want to keep data in the staging table for the purposes of incremental refresh support. In those rare cases, you can specify False so that the data remains in the table after the refresh.

TABLE Attributes	Comments
TruncateTable	Specifies whether data in a table is deleted before a data mart is refreshed. If the property is set to "True," when the data mart is refreshed, the table is first truncated (deleting all its contents). This means that the data mart will be fully refreshed each time. A setting of "False" enables an incremental refresh in certain circumstances. ***Note:*** If the **Use Incremental refresh** checkbox is not marked on the General tab of the data mart properties, all tables are truncated regardless of the setting you specify for this attribute. If the checkbox is marked, only records that have actually been deleted from the source are removed. Setting the TruncateTable attribute to False is not the same as specifying an incremental refresh using the DATAPROVIDER incremental attributes. The incremental attributes work only with direct select statements for an ADO.NET connection. If you want to enable incremental refreshes for other sourceset types, you need to set the TruncateTable attribute to False, and specify your own properties that either delete the existing data or implement some sort of incremental refresh functionality. You must also ensure that there are no duplicate primary keys.

FIELDSET

The FIELD element is a child of FIELDSET. The available properties for the FIELD element depend on the DataType of the field.

FIELD Attributes	Comments
Name	Name of the field in the data mart table
DataType	Specifies the SQL Server data type, i.e. DateTime, Image, Text, etc.
Size	Specifies the maximum number of characters for a data entry in the field.
ForeignKeyTo	If this field is a foreign key, the ID of the Primary key field to which this field points.
ID	A unique identifier for this field. This must be unique across all elements of the XML file. The ***Information Edge XML Editor*** can auto assign field IDs.

FIELD Attributes	Comments
IsIdentity	Determines whether the field is the Primary Key for the table. Set to “True” if the field is an autoincrement field. Using this property should be necessary only in rare circumstances. For example, if you are importing data from a spreadsheet and want to manually specify a field as the Primary Key and will not be using the data with ***Information Edge*** features that are dependant upon the Primary Key data never changing (such as Snapshot tables). For more information, see “Creating a data mart from an Access database” on page 226 and “Creating a data mart from an Excel spreadsheet” on page 230.
Re7Field	Can use Re7SpecialFieldEnum to specify a value of “None”, “ConstituentID”, “GiftID”, “GiftAmount”, “GiftDate”, “GiftFund”, or “GiftAppeal”. “ConstituentID” indicates that the field has the same value as the ID field in the RERECORDS table. “GiftAmount” is used with the Marketing Segmentation optional module when totaling gift amounts. “GiftID” is used to indicate which field in the table matches the ID field in GIFT in ***The Raiser’s Edge***. The others are reserved for future use.
NoIndex	Set NoIndex to “true” on every field except those that will be used as criteria for smart fields or dimensions, or fields that are foreign keys that will be used during joins between tables. For more information, see “Indexing Fields” on page 255.
NumericPrecision	Specifies the maximum number of digits in a fixed-precision, numeric data type.
NumericScale	Determines how many digits to the right of the decimal point are used to represent values for a numeric Parameter or Field object.

SOURCESET

The SOURCESET element is used to define the source of the data, such as a SQL statement for an OLEDB source. You will use this element for most SQL data sources, including ODBC and OLEDB. You can define more than one source as input for a single table. SOURCESET has a number of child elements.

DATAPROVIDER

Attributes	Comments
CommandText	SQL SELECT statement that populates the table. If you are using incremental processing, you will need to modify the WHERE clause of the command text to include the {@@LASTENDPOINT} and {@@CURRENTENDPOINT} macros. For more information, see “Incremental Command Text Macros and Examples” on page 256.
CommandTextHasMacros	True if the SQL statement above contains one or more of the predefined macros to be expanded at runtime. You can use these macros as placeholders for certain text strings. For more information, see “Macros” on page 254.

FastLoad	Defaults to False.
	When pulling data from OLEDB or MS SQL Server sources, setting this to “true” causes ***The Information Edge*** to use the SQL Server bulk load feature (the OLEDB IRowSetFastLoad interface available via the DTS DataPump API).
	However, not all CommandText SQL statements can be used with FastLoad=True. If the SQL statement contains any expressions that are not direct column names from a table or view, then the expression must have an alias. For example, the statement:
	`Select First_Name + ', ' + Last_Name, ID from dbo.RECORDS`
	would not be eligible for FastLoad=True because the first column in the select statement is an expression that has not been named.
	If you change this SQL to:
	`Select First_Name + ', ' + Last_Name as 'Name' , ID from dbo.RECORDS`
	then FastLoad=True can be used.
	If you specify this as true, then you must also specify a **IDsChangedSQL** attribute in the Incremental attributes.

FastLoadBatchSize	This attribute specifies the number of rows to insert in a single batch. The default is 10,000, a value of 0 means to insert all rows in one batch. We recommend you thoroughly test that any change from the default to make sure it provides a benefit.

Attributes	Comments
ConnectionString	The provider-specific connection string used to connect to the source provider data source. You can use the Connection String Wizard to help create connection strings for certain SQL Server data sources. For more information, see “Creating a data mart with the SQL Server Wizard” on page 237. Many connection string examples are available at www.connectionstrings.com. If you use a ConnectionType that specifies an OLEDB source, you can click the ellipses to access the Data Link Properties screen to help you define the connection string. For more information, click **Help** on the Data Link Properties screen.
ConnectionType	The type of .NET data provider to use for the connection to the source data; the sourceCommand Enum value specifies data source (OLEDB, ODBC, Oracle, etc.). If you select a ConnectionType of “BIDataSourceCmd” and also specify an incremental refresh, the data source must not be set to UseOpenRowSet. To turn off UseOpenRowSet, ensure that the **Use OpenRowSet for fast access to this data source** checkbox is not marked in the data source properties (available by selecting **Data Sources** from the **Tools** menu. Then select the source and click **Properties**).

Attributes	Comments

Incremental	These attributes enable you to specify criteria used to incrementally update a USC data mart. For more information and examples, see “Incremental Refresh in Universal Source Connector Data Marts” on page 255.
	CurrentTimeStampSQL: This provides a way to determine the current date and time from the source system, which is needed for an incremental refresh to work properly.
	IDOnlySQL: This must be a well formed SQL statement that selects only the primary key field. This list of IDs is used to determine which records need to be deleted from the data mart. Records in the data mart that are not also in this list are deleted.
	IDsChangedSQL: You can specify a SQL statement that returns the set of IDs that have been changed from the standpoint of the incremental timestamp, and USC deletes all these rows in a single statement. This helps improve the performance of incremental processing, and is required when using the FastLoad=True attribute to bulk load during an incremental refresh.
	The form of the SQL statement will typically match the FROM and WHERE clause of the CommandText that is configured for incremental processing but will specify only the ID column in the select statement. For example, if the CommandText is:
	`SELECT ID, FIRST_NAME,LAST_NAME`
	`FROM DBO.RECORDS`
	`WHERE ((RECORDS.IS_CONSTITUENT = -1) AND (RECORDS.DECEASED = 0) AND`
	`(RECORDS.DATE_LAST_CHANGED BETWEEN '{@@LASTENDPOINT}' AND '{@@CURRENTENDPOINT}'))`
	then the IDOnlySQL should be:
	`SELECT ID`
	`FROM DBO.RECORDS`
	`WHERE ((RECORDS.IS_CONSTITUENT = -1) AND (RECORDS.DECEASED = 0) AND`
	`(RECORDS.DATE_LAST_CHANGED BETWEEN '{@@LASTENDPOINT}' AND '{@@CURRENTENDPOINT}')`
	Note that the only difference is in the SELECT clause. In more complicated CommandText SQL statements with JOINS included, you may or may not need to perform those same joins in the IDOnlySQL - the SQL should specify the set of IDs that will match the same criteria as the main CommandText that is used to load the table.
	TimeStampFormat: This defines the format for the timestamp field. For information about the available format characters, see “Time Stamp Date Format Characters” on page 256.

Attributes	Comments
SharedProviderID	The ID of a SHAREDPROVIDER element to use for the connection information for this source.
SourceGUID	This is a string used to uniquely identify a data mart and track refresh time stamps. If this ID is not unique for each data mart, an incremental refresh may not process correctly. Multiple data marts can have identical SourceGUIDs. For example, you can save the XML from a data mart that contains a SourceGUID, and use it to create a second data mart. However, you cannot copy the XML from one table and paste it in to create a second table, because then two sources in the same data mart would be using the same SourceGUID.
SourceType	The type of the source containing the data to be used to fill the table.

DATAPROVIDER is the parent of the COMMANDTEXT element.

CSVFILE

Attributes	Comments
FileName	Loads data from a specified comma separated text file. The full path to the file must be entered.
FirstRowIsFieldNames	If True, indicates that the first row of the spreadsheet contains field names rather than data.

COMCLASS

Attributes	Comments
ProgID	Specifies the COM Prog ID used to identify a class the implements IBICustomTableSource or a method with the following prototype: LoadTable(byval oLoadArgs as Object)
CustomParams	Enables you specify custom parameters to pass the class.

CLRCLASS

Attributes	Comments
AssemblyQualifiedName	The .NET assembly qualified type name of a creatable class that implements IBICustomTableSource or a method with the following prototype: LoadTable(Byval oLoadArgs as Object)
CustomParams	Enables you specify custom parameters to pass the class.

NOP

Does nothing on its own. You can use this to fill the table for the source via other means (such as COMCLASS or CMDSHELL).

CMDSHELL

Executes the given command line. You can use this to execute, for example a DTS package (from *SQL Server*) using the DTSRun.EXE utility.

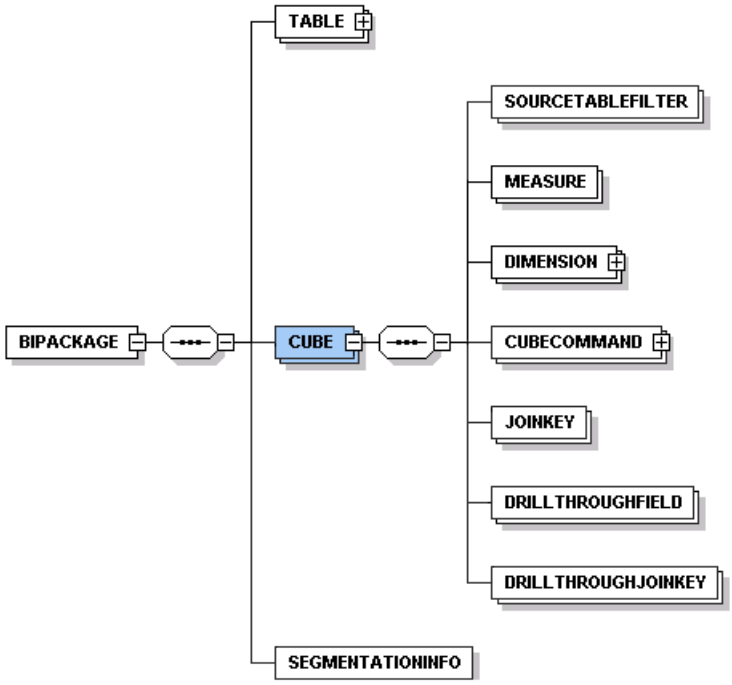
Attributes	Comments
ExeName	Full path to the executable file to run.
Arguments	Any command line arguments to pass to the executable program.
ThrowErrorIfNotExitCode	The exit code that specifies a failure of the command.
TimeOutMinutes	Number of minutes after which the command will time out if it has not completed executing.
UseXPCmdShell	Set to true if you want to use the SQL Server xpCmdShell to execute the command line. This ensures that the command line is always executed on the server instead of the context of the refresh.

CURRENTDATAMART

Attributes	Comments
CommandText	SQL SELECT statement that populates the table.
IsExecuteCommand	Uses a SQL statement executed against the ***The Information Edge*** *SQL Server* database. If True, this is not a SELECT statement. For example, it may be an UPDATE or INSERT statement.
ConnectAsUser	The user context under which to execute the SELECT statement. For some operations, you want to use the security context of the BBMINE_APP application role (the default). This role has full rights in the BBMINE database. However, for some operations you need to use your actual *SQL Server* login. For example, issuing xp_CmdShell or connection to a linked server.
CommandTextHasMacros	You can use pre-defined macros as placeholders for certain text strings. For more information, see “Macros” on page 254. You can also use macros to select the correct records to enable an incremental refresh. For more information, see “Incremental Command Text Macros and Examples” on page 256.

CUBE

The CUBE element supports creation of OLAP cubes when you bring the information into ***The Information Edge***. It is parent to several elements.



SOURCETABLEFILTER

Attributes	Comments
SourceField	The ID of the field in the fact table to which the criteria is applied.
Criteria	A SQL WHERE clause applied to the fact table that evaluates to either True or False and can be used to limit data included in the cube.

MEASURE

Attributes	Comments
Name	Name of the measure as it will appear in Pivot Tables.
SourceField	The ID of the field in the fact table upon which the measure is based.
Aggregate	The MeasureAggregateEnum specifies the aggregate function on which the measure is based: “Sum”, “Max”, “Min”, “Count”, or “DistinctCount”.

DIMENSION

Attributes	Comments
Name	Name of the dimension
SourceField	Field providing the data for the dimension
ParentDim	If the dimension is a child of another dimension, this is the unique ID of the parent dimension in a hierarchy.
ID	Unique ID for this dimension so it can be referred to by other dimensions.
UnaryOperatorColumn	The ID of the field in the fact table that contains a unary operator for rollup overrides. This property provides a simple way to control how member values are rolled up to the values of their parents. When the value of this property is assigned to the name of a column, the contents of that column are used as the unary operator for the member. This unary operator is applied to the member when evaluating the value of the member's parent.

The DIMENSION element is also parent to the DATEOPTION (creates the date hierarchy) and MEMBERPROPERTY elements.

CUBECOMMAND

Attributes	Comments
Name	The name of the calculated measure at it will appear in Pivot Charts.
CommandType	Specifies the type of MDX command to create. Can use cubeCmdTypeEnum to create various items and calculations within cube.
FormatString	If the value will not be manipulated in other formulas, you can indicate it be displayed as a string with formatting such as currency, percent, etc.
MDX	This is the MDX CREATE COMMAND statement that defines this particular command. Click the ellipses to access the Edit MDX screen.
NonEmptyBehavior	Stores the name of the measure used to resolve NON EMPTY queries in multidimensional expressions. If this property is blank, the calculated member must be evaluated repeatedly to determine if a member is empty. If the NonEmptyBehavior property contains the name of a measure, the calculated member is treated as empty if the specified measure is empty.
SolveOrder	Returns a Long specifying the value of the calculated member's solve order multidimensional expression argument. The default value is zero. Solve order determines two things: the order in which dimensions, members, calculated members, custom rollups, and calculated cells are evaluated, and the order in which they are calculated. The member with the highest solve order is evaluated first, but calculated last.

CUBECOMMAND is parent to the COMMANDMDX element which can be used to create multi-dimensional expressions for calculations within the cube.

JOINKEY

Attributes	Comments
ForeignKeyField	A join key maps to multiple data sources. Specify a ForeignKeyField that refers to the primary key field or fields in another table. This is the ID of the field that is the foreign key for this join. The foreign key can be used to cross-reference tables.

DRILLTHROUGHFIELD

Attributes	Comments
TableFieldID	Drill-through enables you to drill from the summarized and calculated data stored in your multi-dimensional database into detailed data stored in a relational database. You can specify the TableFieldID to indicate the drill through field. This is the ID of the field in the table that will be returned by the drillthrough.

DRILLTHROUGHJOINKEY

Attributes	Comments
ForeignKeyField	Specify a ForeignKeyField that refers to the primary key field in another table that you want to drill through.

SEGMENTATIONINFO

Available with the *Marketing* optional module.

Attributes	Comments
DonorIDField	If you have the *Marketing Segmentation* optional module, you can create a segmentation cube for your custom data mart. You must first set the SupportSegmentation property to “True.” Then you can select the fields to use in segmentations.
GiftTable	
GiftIDfield	
GiftDonorIdField	
GiftAmountField	
GiftProgramField	
GiftDateField	

Macros

For some attributes, you can use pre-defined macros as placeholders for certain text strings that you may not know at the time you create your XML file. For example, because the exact name of the table to be filled is defined by the user when they choose a table prefix during data mart installation, you can specify a macro to account for this. The available macros are:

{@@CURRENT_TABLENAME} = The full table name of the table being inserted into (db+owner+prefix+tablename)

{@@CURRENT_TABLEPREFIX} = The table prefix chosen by the user

{@@CURRENT_PACKAGENAME} = The name of the data mart as chosen by the user during data mart installation

{@@CURRENT_PACKAGEID} = The dbo.package table ID column value for the current data mart

{@@CURRENT_DATABASENAME} = BBMINE

{@@BBMINE_APP_ROLENAME} = BBMINE_APP

{@@ANALYSIS_SERVER_NAME} = The name of the Analysis Server machine.

{@@ANALYSIS_SERVER_DBNAME} = BBMINE_MD (The name of the BBIC database on the Analysis server machine).

{@@PATH_INSTALL_ROOT} = The folder where ***The Information Edge*** is installed.

{@@PATH_INSTALL_BIN} = The folder where ***The Information Edge*** binaries (.dll and .exe files) are installed.

Indexing Fields

By default, the *Universal Source Connector* indexes most fields you define unless you explicitly tell it not to. The Universal Source Connector does not index booleans, memos, and fields over 800 characters; however, it does index every other field. When adding fields, you will probably want to index only fields that may be used for a Smart field or in a dimension. If you index every field, the XML file may take quite awhile to load and create indices.

Since the default in the xml file specifies to index fields, if you do not want to index a field, you must explicitly say so by setting the noIndex property to “true”. For example (please note that the actual code would not have a line break):

```
<FIELD name="Addr1" dataType="VarChar" size="100"
id="Addr1.id" noIndex="true"/>
```

We recommend you set noIndex to “true” on every field except those fields you know will be used as criteria for smart fields or dimensions, or fields that are foreign keys that will be used during joins between tables.

If you already created a data mart from an XML file that indexes all fields, you may want to go back and specify that some fields not be indexed. This would be the case especially if the data mart takes a long time to refresh, and the Processing History tab shows that the indices took as much time to create as the tables did to refresh.

Incremental Refresh in Universal Source Connector Data Marts

Incremental refresh in a custom data mart enables you to process only records that have changed since the last time the mart was refreshed, enabling much faster processing times for the mart. The Incremental attributes are available only for the Source Type of DATAPROVIDER. For more information, see “DATAPROVIDER” on page 246.

Time Stamp Date Format Characters

Character case is important. For example, ‘mm’ represents minutes, while ‘MM’ represents month.

:	Time separator. In some locales, other characters may be used to represent the time separator.
/	Date separator. In some locales, other characters may be used to represent the date separator.
dd	Displays the day as a number with a leading zero (for example, 01).
MM	Displays the month as a number with a leading zero (for example, 01/12/01).
HH	Displays the hour as a number with leading zeros using the 24-hour clock (for example, 01:15:15).
mm	Displays the minute as a number with leading zeros (for example, 12:01:15).
ss	Displays the second as a number with leading zeros (for example, 12:15:05).
yyyy	Displays the year in four digit numeric format.

Incremental Command Text Macros and Examples

To select the correct records (only those that have changed since the last refresh) you need to modify the where clause of the command text to contain the following macros:

{@@LASTENDPOINT} = the time stamp for the last time the data mart was processed.

{@@CURRENTENDPOINT} = the time stamp generated when the data mart starts processing. This is set by executing the CurrentTimeStamp SQL statement before the source is processed.

SQL Server Example

This is a simple command text issued against a *SQL Server* database.

```
SELECT [ID], [NAME], [AGE]

FROM [PEOPLE]

WHERE ([DATE_LAST_CHANGED] BETWEEN ‘{@@LASTENDPOINT}’ AND
‘{@@CURRENTENDPOINT}’)

   OR ([DATE_ADDED] BETWEEN ‘{@@LASTENDPOINT}’ AND
‘{@@CURRENTENDPOINT}’)
```

The incremental attributes are:

- CurrentTimeStampSQL - SELECT CURRENT_TIMESTAMP
- TimeStampFormat - ‘yyyy-MM-dd HH:mm:ss’
- IDOnlySQL - SELECT [ID] FROM [PEOPLE]

When processed, the {@@LASTENDPOINT} macro will be replaced by the time the data mart was last processed. The {@@CURRENTENDPOINT} macro is replaced by the value selected using the CurrentTimeStampSQL statement. Both dates are formatted using the TimeStampFormat string.

If the data mart was last processed on 1/1/2005 at 1:00 am, and the next night the data mart is processed at 2:00 am, the macros are replaced by:

{@@LASTENDPOINT} = '2005-01-01 01:00:00'

{@@CURRENTENDPOINT} = '2005-01-02 02:00:00'

Yielding a WHERE clause of:

```
WHERE ([DATE_LAST_CHANGED] BETWEEN '2005-01-01 01:00:00' AND
   '2005-01-02 02:00:00') OR
   ([DATE_ADDED] BETWEEN '2005-01-01 01:00:00' AND
   '2005-01-02 02:00:00')
```

The first part of the WHERE clause ensures that only those records that were changed after the last time the data mart was processed (1/1/2005 at 1:00 am) are selected.

The second part of the WHERE clause includes records that were added since the last refresh.

When the data mart finishes processing, the Last End Point is set to the Current End Point and the process is repeated the next time the mart is refreshed.

Microsoft Access Example

This is a simple command text issued against a Microsoft Access data base

```
SELECT [ID], [NAME], [AGE]
FROM [PEOPLE]
WHERE ([DATE_LAST_CHANGED] > CDATE({@@LASTENDPOINT}) OR
   [DATE_ADDED] > CDATE({@@LASTENDPOINT})) AND
   ([DATE_LAST_CHANGED] < CDATE({@@CURRENTENDPOINT}))
```

The incremental attributes are:

- CurrentTimeStampSQL - SELECT Now()
- TimeStampFormat - 'MM-dd-yyyy HH:mm.ss'
- IDOnlySQL - SELECT [ID] FROM [PEOPLE]

When processed, the {@@LASTENDPOINT} macro is replaced by the timestamp from when data mart was last processed. The {@@CURRENTENDPOINT} macro is replaced by the value selected using the CurrentTimeStampSQL statement. Both dates are formatted using the TimeStampFormat string.

For example, a data mart was last processed on 1/1/2005 at 1:00 am. The next night, the data mart is processed at 2:00 am.

With a TimeStampFormat of 'MM-dd-yyyy HH:mm.ss', the macros will be replaced with the following values:

{@@LASTENDPOINT} = '01-01-2005 01:00:00'

{@@CURRENTENDPOINT} = '01-02-2005 02:00:00'

Yielding a WHERE clause of:

```
WHERE ([DATE_LAST_CHANGED] > CDATE('01-01-2005 01:00:00') OR
   [DATE_ADDED] > CDATE('01-01-2005 01:00:00')) AND
   ([DATE_LAST_CHANGED] < CDATE('01-02-2005 02:00:00'))
```

The first part of the WHERE clause ensures only those records that were changed after the last time the data mart was processed (1/1/2005 at 1:00 am) are extracted.

```
([DATE_LAST_CHANGED] > '01-01-2005 01:00:00' OR
   [DATE_ADDED] > '01-01-2005 01:00:00')
```

The second part of the WHERE clause prevents records from being selected that may be changed after the data mart starts processing (1/2/2005 at 2:00 am).

```
([DATE_LAST_CHANGED] < '01-02-2005 02:00:00')
```

Data Warehouses

Chapter 7

Contents

Key Values **260**
Adding Data Warehouses **260**

Procedures

Adding a Data Warehouse 260
Completing the Warehouse General tab 261
Completing the Warehouse Data Marts tab 262
Completing the Warehouse Publications tab 264

With ***The Information Edge Enterprise***, you can use the *Warehouse* feature to construct data warehouses by combining the data in multiple marts. This enables you to compare and analyze data from a variety of sources in your reports. For example, you may want to combine separate data marts from different chapters within your organization, or you may have a separate ticketing data mart that you would like to combine with a data mart created from ***Raiser's Edge*** information. All the features of ***The Information Edge*** are available to analyze data warehouses you create from your data marts.

Key Values

One of the most important considerations for a data warehouse is a key that can be used across data marts to identify records that are the same in multiple marts. You may already have an ID field that serves this function in your data marts, or you may need to create a key using a **Key Value** smart field. By creating **Key Value** smart fields based on the same criteria in your data marts, you can use the results to find matching records in the marts.

If you are a ***Raiser's Edge*** user, the **Key Value** smart field is very similar to the concept of duplicate criteria you set up in *Configuration* to identify constituents who may have more than one record. The **Key Value** smart field concatenates your input parameters to match keys in other data marts.

For more information about creating **Key Value** smart fields, see "Key Value" on page 299.

Adding Data Warehouses

Adding a data warehouse is similar to adding a data mart. However, for each data mart you add to a warehouse, you must specify the Master table and Key column. This means you must identify a table upon which all other tables are dependant in the data mart, and you must specify which column holds values you want to compare with other data marts so you can identify the same record in multiple marts.

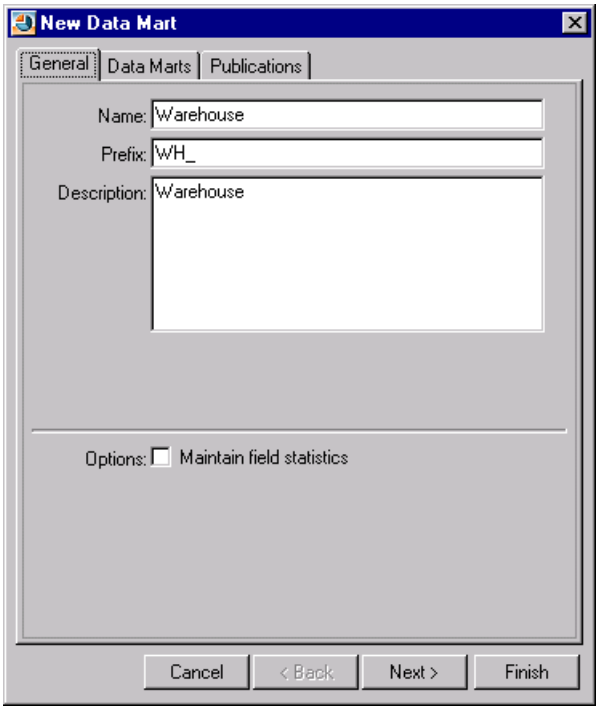
When refreshing a warehouse, the individual marts contained in the warehouse should be processed before the warehouse so it will contain the most recent data. If you create a schedule that automatically refreshes a warehouse, you should specify that each mart in it process before the warehouse. For more information about scheduling data mart refreshes, see "Scheduling automatic data mart processing" on page 127.

➢ Adding a Data Warehouse

1. On the menu bar, select **File**, **New**. Select **Data Mart**, **Warehouse**, the New Data Mart screen appears on the General tab. For information about entering information on the General tab, see the next procedure.
2. You must specify which data marts you want to add to the warehouse, and select the table upon which detail tables in each mart will be dependant in the warehouse. For more information, see "Completing the Warehouse Data Marts tab" on page 262.
3. After you add exports and HTML Publications to a warehouse, you can specify that they process automatically whenever the warehouse processes. For more information, see "Completing the Warehouse Publications tab" on page 264.

➢ Completing the Warehouse General tab

1. While creating or editing a Warehouse, select the General tab.

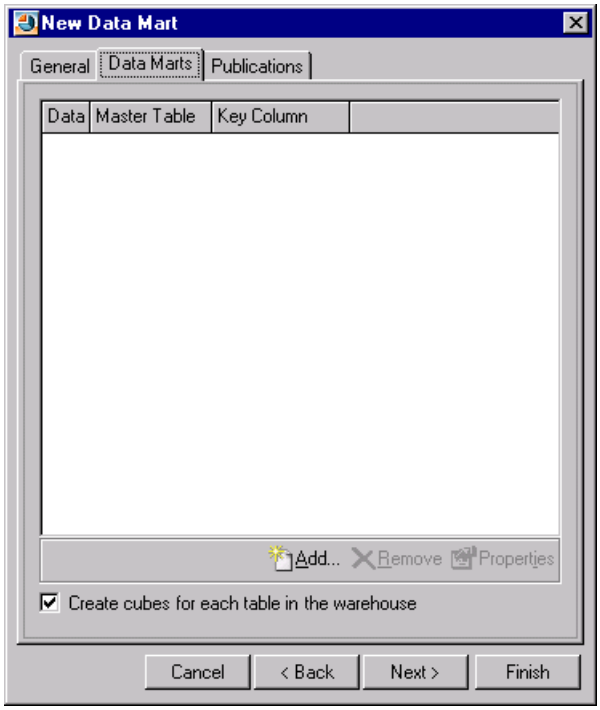


2. Enter a name to display for this warehouse in the tree view in the **Name** field. Enter a prefix to display with each table entry for this warehouse in the **Prefix** field. Enter text to describe the warehouse in ***The Information Edge*** console in the **Description** field.
3. Mark the **Maintain field statistics** checkbox if you want to view information such as data type, how many instances do and do not contain data, and the number of different values for each field in the mart. Tracking field statistics enables you to determine whether a field is valid for further analysis based on its population.
4. If you care creating a new warehouse, click **Next** to access the Data Marts tab. For more information about this tab, see the next procedure.

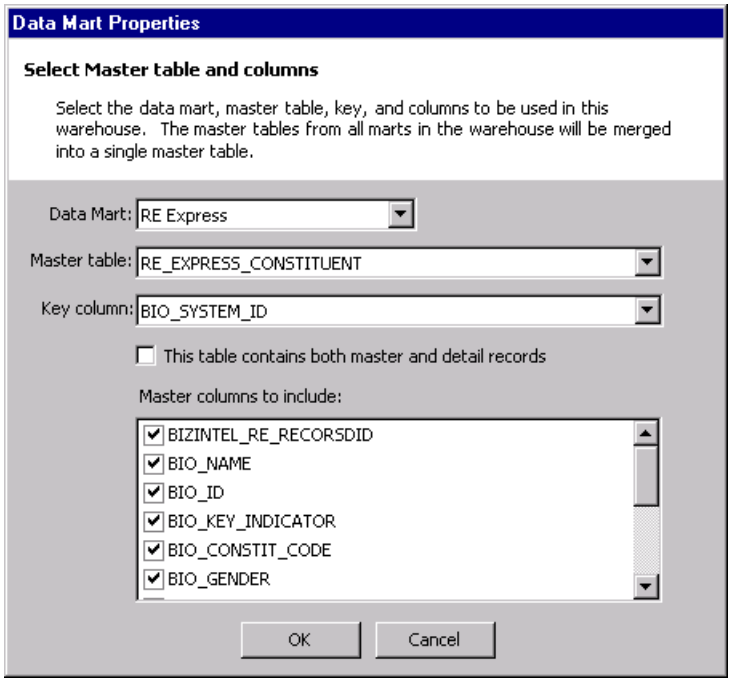
   If you are editing the properties of an existing warehouse, click **OK** to save your changes and exit the properties tabs.

➢ Completing the Warehouse Data Marts tab

1. While creating or editing a Warehouse, select the Data Marts tab.

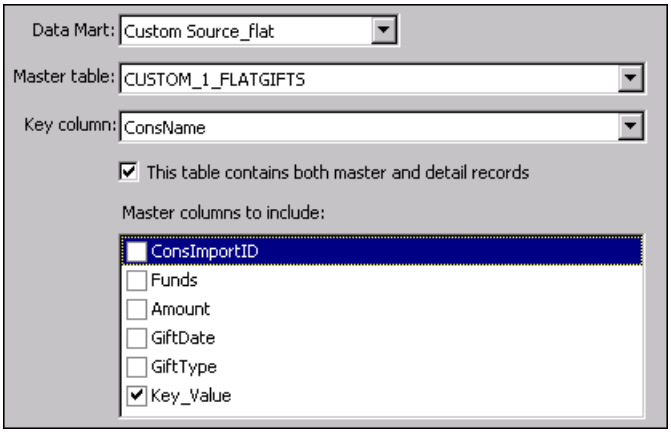


2. To add a data mart to your warehouse, click **Add**. The Select Master table and columns screen appears.



3. The **Data Mart** field drop-down includes all data marts already added to ***The Information Edge***. Select a data mart to include in your warehouse.

4. In the **Master table** field, select the table upon which detail tables in this data mart will be dependant in the warehouse. In most cases, the Master table will be the constituent or donor table. The Master tables from all data marts are merged into one master table in the warehouse.
5. In the **Key Column** field, enter the column which will be compared to other data marts to identify the same records in multiple marts. For more information about key values, see “Key Values” on page 260.
6. Mark the **This table contains both master and detail records** checkbox if the table is flattened to include data such as both constituent and gift information.



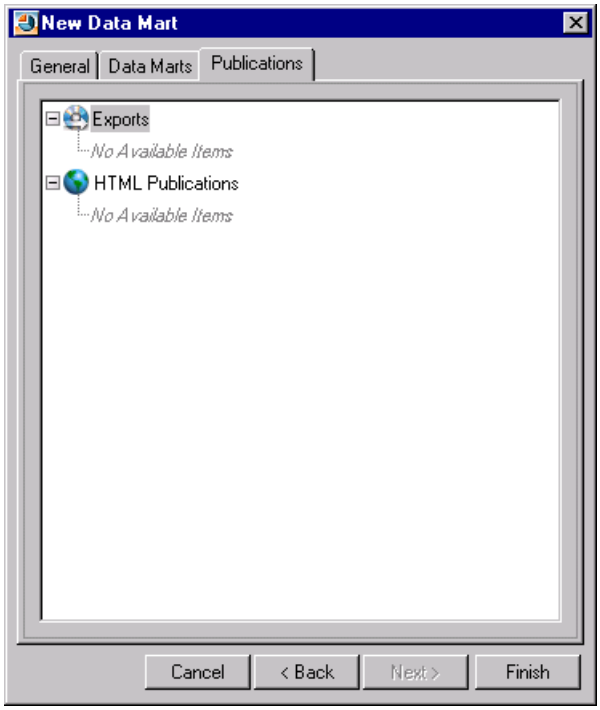
   For example, you would mark the checkbox if you are adding a ticketing database that contains name and address information, as well as purchasing history and amounts in one table. This checkbox is not enabled for data marts created with *RE:Express*.
7. In the **Master columns to include** box, mark the checkbox beside any columns you want to include in the warehouse. If your table contains both master and detail columns, you should unmark the checkbox by detail records.
8. Click **OK**, you return to the Data Marts tab where the data mart now appears.
9. Add any other data marts you want to include in the warehouse.
10. Mark the **Create cubes for each table in the warehouse** checkbox if you want to take full advantage of all features in ***The Information Edge***, such as Pivot Tables and Charts, for the warehouse.

    The only time you may want to unmark this checkbox is if you do not intend to use this warehouse with any interactive features; for example, you may intend to use the data only in *Crystal Reports*, not in Charts or Pivot Tables.
11. If you are creating a new warehouse, click **Next** to access the Publications tab. For more information about this tab, see the next procedure.

    If you are editing the properties of an existing warehouse, click **OK** to save your changes and exit the properties tabs.

➢ Completing the Warehouse Publications tab

1. While creating or editing a Warehouse, select the Publications tab.



   If you are creating a warehouse, no items are available for processing yet. If you are editing an existing warehouse, any exports and HTML Publications you have created are available as checkboxes. Specify which of these items you would like to process automatically when the warehouse is processed.

   When you create exports or HTML Publications on a client machine, you can specify an output path on the client machine. However, because the Schedule function runs on the server, it attempts to output the HTML Publication or export to the specified output path on the server. If the path does not exist on the server, the HTML Publication or Export fails.In this case, you need to create the same path on the server to enable the export or HTML Publication to process.

2. If you are editing the properties of an existing warehouse, click **OK** to save your changes and exit the properties tabs. If you are creating a new warehouse, click **Finish** to install the warehouse.

   A message informs you when the warehouse is successfully installed. It then appears in the tree view.

Smart Field Details

Appendix A

Contents

n(th) Item **267**
Average **268**
Bin **268**
Blackbaud Transaction Data **271**
Concatenation **274**
Condition **275**
Joining Tables With Subqueries 279
Contributor **285**
Copy **285**
Count **290**
Custom RFM **290**
Date Interval **293**
Days Since **293**
Decile **293**
Depreciation **294**
Effective Annual Interest Rate **294**
Expression **294**
Expression Smart Field Examples 296
First Gift **298**
Future Value **298**
Interest Payment **298**
Interest Rate **299**
Key Value **299**
Latency **302**
Latest Gift **302**
List **302**
LYBUNT **302**
Maximum **303**
Median **303**
Minimum **303**
Mode **303**
Monitored Field Query **304**
Monitored Field Query Date Processing 305
Calendar vs. Relative to Process Date 305
Between vs. As of 306
Net Present Value **307**

Non Contributor **307**
Number of Periods. **307**
Payment on Principal **308**
Percentile **309**
Periodic Payment. **309**
Pledge Valuation **309**
Present Value **311**
Quartile. **312**
Quintile **312**
RFM **312**
Search and Replace **313**
Sequence **313**
Soundex **313**
Standard Deviation **314**
Straight-line Depreciation **314**
Sum **315**
Sum-of-Years Digits Depreciation **315**
SYBUNT **315**
This Month **315**
This Year **316**
USA ZIP Distance **316**
Financial Smart Field Calculations **316**

n(th) Item

Category: Miscellaneous

What it Does: An **(n)th Item** smart field finds any numbered child record in a collection and returns a value from the record. So within a set of gifts, you can find any item in the list and pull data from it. For example, you may want to look for patterns from data associated with the second gifts from your constituents.

A key difference between this smart field and the First Gift and Latest Gift smart fields is that the **n(th) Item** smart field can include more than just the gift date; it can also include data such as campaign, fund, and appeal.

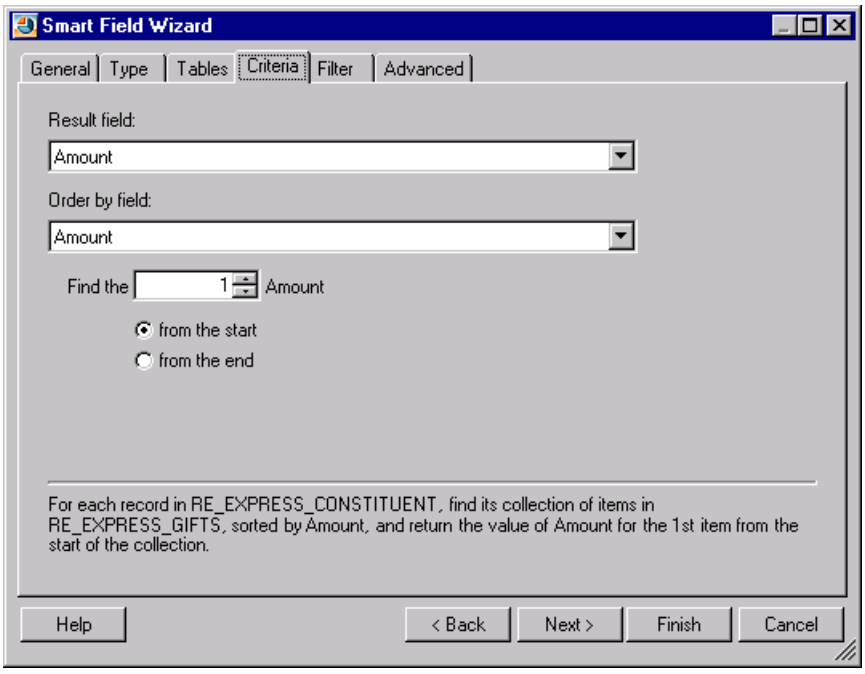
When Would I use an (n)th Item Smart Field? Use this smart field when you need flexibility in pulling data from specific numbered gift records. For example, you may want to create separate **n(th) Item** smart fields to look for trends in which funds were associated with the first, second, and third gifts from your donors. Or you may want to look for patterns among the appeals associated with the last five gifts from your constituents.

Criteria: On the Criteria tab for an **(n)th Item** smart field, you must specify the data that the field will return, the value that will determine the order of the values you selected to return, and which specific value you want to return (first, second, third, etc.).

For more information, see the following procedure.

➢ Adding (n)th Item smart field criteria

1. When creating an **(n)th Item** smart field, select the Criteria tab



2. In the **Result** field, select the data that will be returned in the smart field.

3. In the **Order by** field, select the value that will determine the order of the n(th) value. For example, if you select AMOUNT, and specify to see the third item in the next step, the smart field will return the selected data associated with the third highest gift from constituents.
4. Select the number of the item you want to find and specify whether that number is from the start or end of the collection. For example, if you specified date in the **Order by field** and you select "2" **from the end**, the field will return the selected data associated with the next to last gift received.

Average

Category: Statistical

What it Does: An **Average** smart field selects the average value of a field in a one-to-many relationship.

When Would I use an Average Smart Field? Use this smart field when you want to determine the average value for a one-to-many field such as gifts for example.

Criteria: On the Criteria tab for an **Average** smart field, you must select the field for which you want to determine the average value.

Bin

Category: Statistical

What it Does: A **Bin** smart field enables you to create groups or bins in which you categorize records. For example, you can use a Bin smart field to set up age banding and group records in specific age ranges.

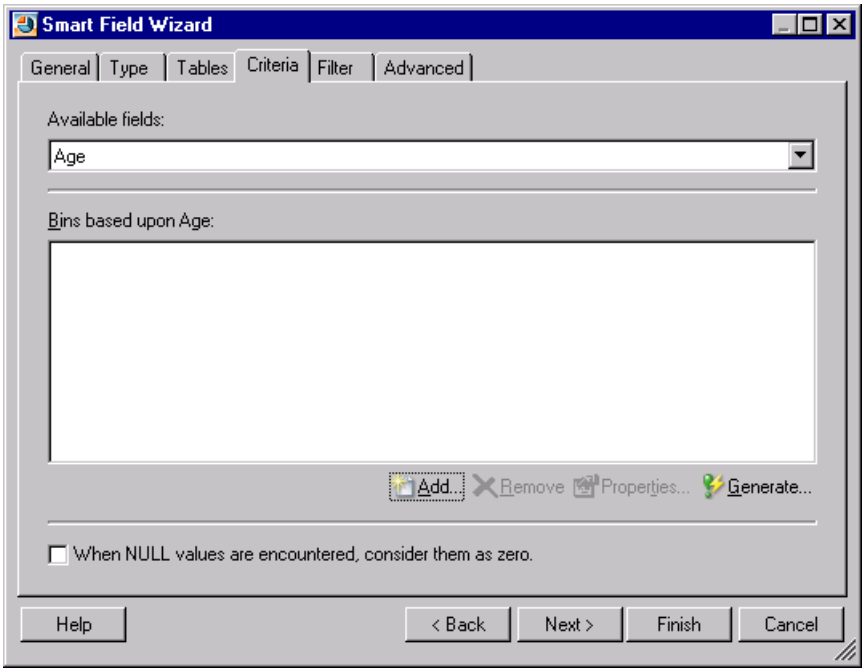
When Would I use a Bin Smart Field? Use this smart field when you want to group records in bands. For example, you can base a "Giving Level" **Bin** smart field on the total gift amount field and include a "Silver" bin for total giving over $1000, a "Gold" bin for giving over $5000, and a "Platinum" bin for giving over $10,000.

Criteria: On the Criteria tab for a **Bin** smart field, you must the specify the field containing values you want to group, and create and name the bins they will be grouped into. You can specify the criteria for each bin manually, or you can let ***The Information Edge*** create them based on information you provide.

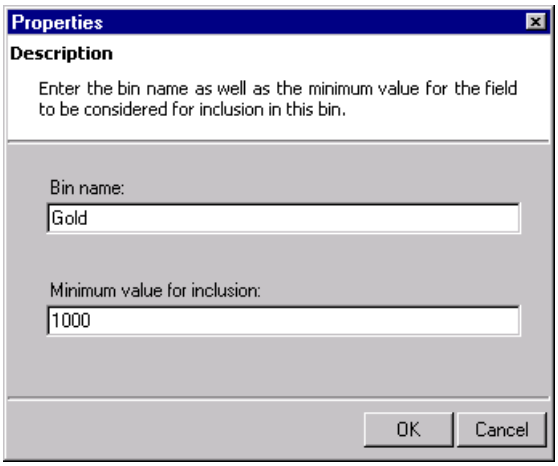
For more information, see the following procedure.

➢ Adding BIN smart field criteria

1. When creating a **BIN** smart field, select the Criteria tab.



2. To manually create a bin, click **Add**. The Description screen appears.

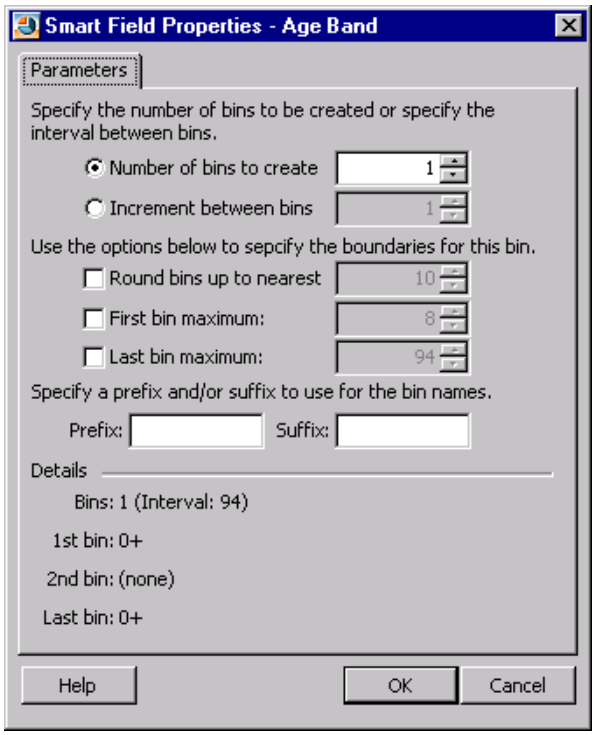


3. Enter a **Bin name** and a **Minimum value for inclusion** in the bin.
4. Click **OK**. You return to the Criteria tab where the bin you created appears in the box.

   You can create the rest of your bins this way, or you can create them automatically all at the same time. For more information, see the next procedure.

➢ Generating bins automatically

1. To discard all the default ranges and automatically generate new ones based on the number of bins you want to use, or a specific increment between bins. click **Generate** on the Criteria tab of a **Bin** type smart field.
2. A message informs you that generating bins will overwrite all existing bins. If you want to discard all existing bins, click **OK**. The Properties screen for the selected range appears.



3. You can specify to create bins based on the number of bins you want to use or based on the increment between bins.
   - **Number of bins to create -** For example, for your **Monetary Total Banding**, you may want to create three bins in which to group your donors based on total giving amounts. In this case, you would mark the **Number of bins to create** option and enter “3” in the numeric field. The program determines the minimum criteria for inclusion in each bin based on the number of bins you create and, in this case, the range of gift amounts you have received.
   - **Increment between bins** - The number of bins created is based on the increment you select. For example, you may want to generate your own bins for **Age Band**. If you mark the **Increment between bins** option and enter “20” in the numeric field, five bins are created in increments of twenty years. If you enter “10”, ten bins are created in increments of ten years.
4. Several checkboxes are available to help you further define the parameters for your bins.

- **Round bins up to nearest** - You can mark this checkbox and specify a number of which multiples will begin all bins. For example, if you are setting bins for a range measured in months, you may want to round up to multiples of 12 so the bins can be easily broken down into years.
- **First bin maximum** - You can mark this checkbox and specify the maximum number for the top end range in your first bin. For example, if you enter 24 for a range measured in months, the top end of your first bin cannot exceed two years.
- **Last bin maximum** - You can mark this checkbox and specify a number that the beginning of your last bin will not exceed. For example, if you enter 60 for an age band, your last bin will always begin with an age that is under 60.

The **Details** frame shows how your bins will be generated based on your settings. As you make changes to the parameters, monitor this frame to ensure your bins are designated as you intend them to be. If any of your settings conflict with each other, a message tells you that bins cannot be generated using your current parameters.

5. In the **Prefix** and **Suffix** fields, enter any information you want to appear in front of or behind your bin names. For example, you may want to include the word “Months” after your bins that are measured in months.
6. Click **OK** to generate your bins and return to the Criteria tab.

Blackbaud Transaction Data

Category: Financial

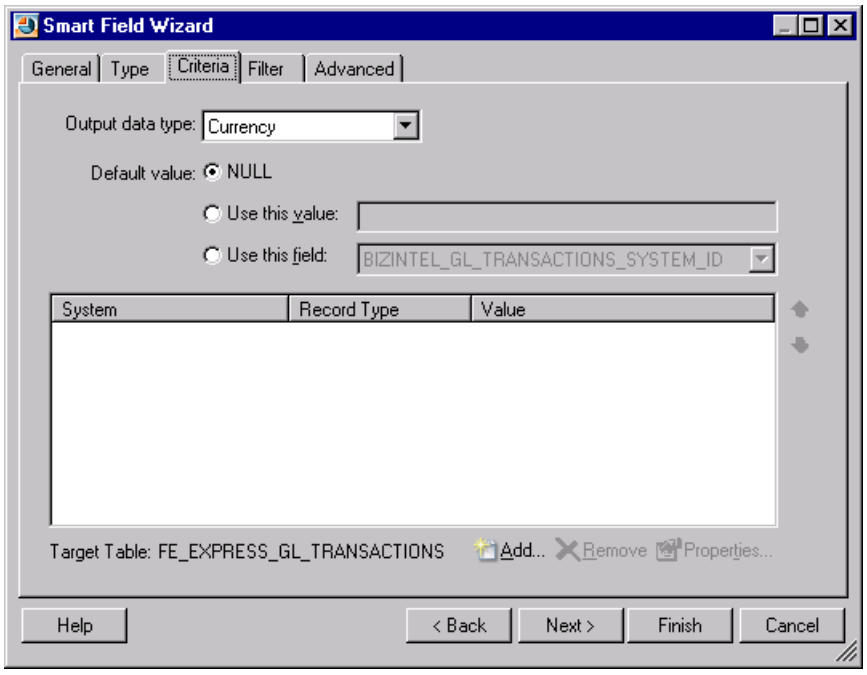
What it Does: A **Blackbaud Transaction Data** smart field copies data from a Blackbaud subledger to the TRANSACTIONS table.

When Would I use a Blackbaud Transaction Data Smart Field? Use this smart field when you want constituent and gift information to appear on the transactions table. If you specified a relationship between an *RE:Express* data mart when creating an *FE:Express* data mart, you can pull ***Raiser’s Edge*** constituent and gift information onto the Transactions table for each transaction.

Criteria: On the Criteria tab for an **Blackbaud Transaction Data** smart field, you must select the type of data you want to output and other information. For more information, see the following procedure.

➢ Adding Blackbaud Transaction Data smart field criteria

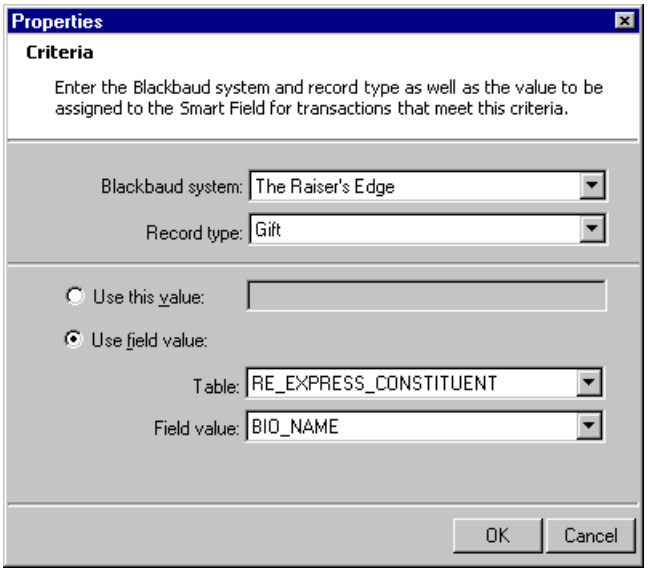
1. When creating a **Blackbaud Transaction Data** smart field, select the Criteria tab



2. Select an **Output data type** for the field. When you create the condition for this field later in this procedure, the value you specify to enter for records that meet your condition criteria must be valid for the type you specify here.
   - **Currency** - Value can be any positive or negative numeric value. Currency values can include as many as four places to the right of the decimal. Values with more than four decimal places are rounded to the last number.
   - **Date** - Value must be a valid date; for example, “06-05-05.”
   - **Numeric** - Value must be numeric (can contain a decimal point).
   - **Integer** - Value must be negative or positive whole numbers.
   - **Text** - Value can be text or mixed value types (such as a date and a numeric value).
3. Beside **Default value**, select the value that you want to appear in the field on records that do **not** meet the criteria you establish. When you select **NULL**, no entry appears in the field.

You can mark **Use this value** and enter a value, or mark **Use this field** and select a field whose value will populate the smart field on records that do not meet your criteria.

4. To create input parameters for the smart field, click **Add**. The Criteria screen appears.


Properties
Criteria
Enter the Blackbaud system and record type as well as the value to be assigned to the Smart Field for transactions that meet this criteria.
Blackbaud system: The Raiser's Edge
Record type: Gift
Use this value:
Use field value:
Table: RE_EXPRESS_CONSTITUENT
Field value: BIO_NAME
OK
Cancel

5. In the **Blackbaud system** field, select the Blackbaud program from which you want to pull values. If you selected to create a relationship with an *RE:Express* data mart when you created this data mart, "The Raiser's Edge" is available in the dropdown. Select it if you want to pull ***Raiser's Edge*** constituent and gift information onto the Transactions table for each transaction.

   If you select ***The Raiser's Edge*** as the **Blackbaud system**, "Gift" is the **Record type**.

   For information about how to create a relationship between an *FE:Express* and *RE:Express* data mart, see "Completing the FE:Express Raiser's Edge Source tab" on page 54.

6. Enter the value that you want to appear in the table for transactions that meet the criteria of this smart field. You can select the option to **Use this value** and enter a specific value.

   You can also select the option to **Use this field** and select a field from the table to use as the value when the condition you establish is true. For example, you may want to place the name of the constituent who donated a gift in the TRANSACTIONS table.

   If the *RE:Express* data mart with which you defined a relationship contains multiple gift tables, they are all available for selection in the dropdown.

7. Click **OK**. You return to the Criteria screen where your input parameters now appear.

The data type you select for the smart field also restricts your options for setting a default value for records that do not meet your criteria. Any entry in the **Use this value** field must be valid for the output data type (for example, a date for a Date type field) and only fields with a matching data type appear in the **Use this field** dropdown.

Concatenation

Category: Miscellaneous

What it Does: A **Concatenation** smart field joins the contents of two or more fields or text values.

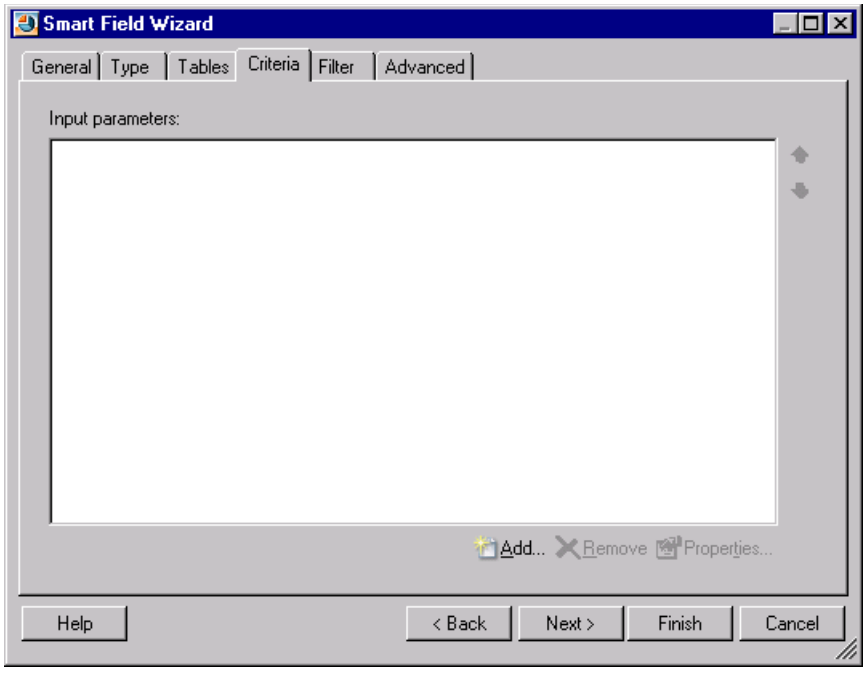
When Would I use a Concatenation Smart Field? Use this smart field when you want to combine data from multiple fields. For example, you may have a data mart created from a database that stores First Name and Last Name as separate fields. You could use a Concatenation smart field to combine these into a single Full Name field.

Criteria: On the Criteria tab for a **Concatenation** smart field, you must specify the field values or text strings you want to join together as the entry for this field.

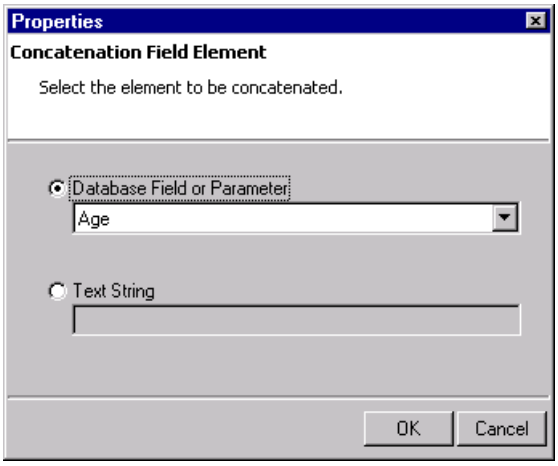
For more information, see the following procedure.

➢ **Adding Concatenation smart field criteria**

1. When creating a **Concatenation** smart field, select the Criteria tab.



2. To specify the information to be concatenated, click **Add** under the **Input parameters** box. The Concatenation Field Element screen appears.



3. Specify whether you want include a field value or text string in the concatenation. Click **OK** to return to the Criteria tab where the information now appears in the **Input parameters** box. Add as many items as you wish to join together.

Condition

Category: Miscellaneous

What it Does: A **Condition** smart field evaluates one or more conditions you create to determine the value of the field.

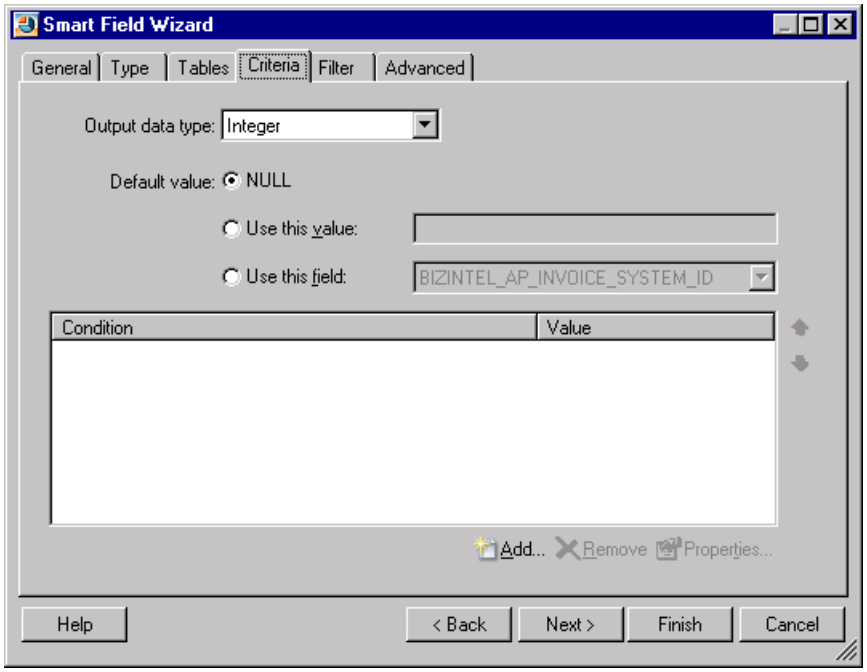
When Would I use a Condition Smart Field? Use this smart field when you want to specify conditions to create a value for a field. For example, you may want to create a condition field that shows who has given gifts greater than or equal to a specific amount after a certain date.

Criteria: On the Criteria tab for a **Condition** smart field, you must create the expressions that determine which records are included in the field. For more information, see the following procedure.

After you save a condition smart field, you cannot change the data type because doing so could invalidate the smart field.

➢ Adding Condition smart field criteria

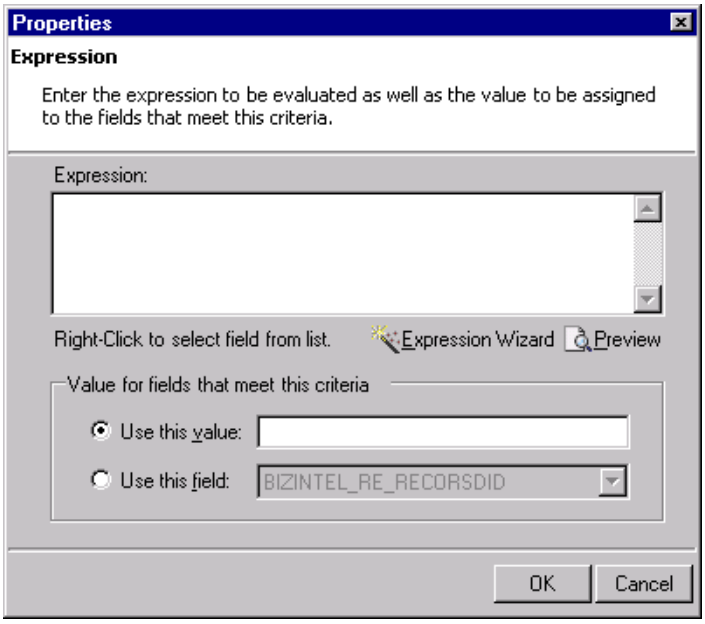
1. When creating a Condition smart field, select the Criteria tab.



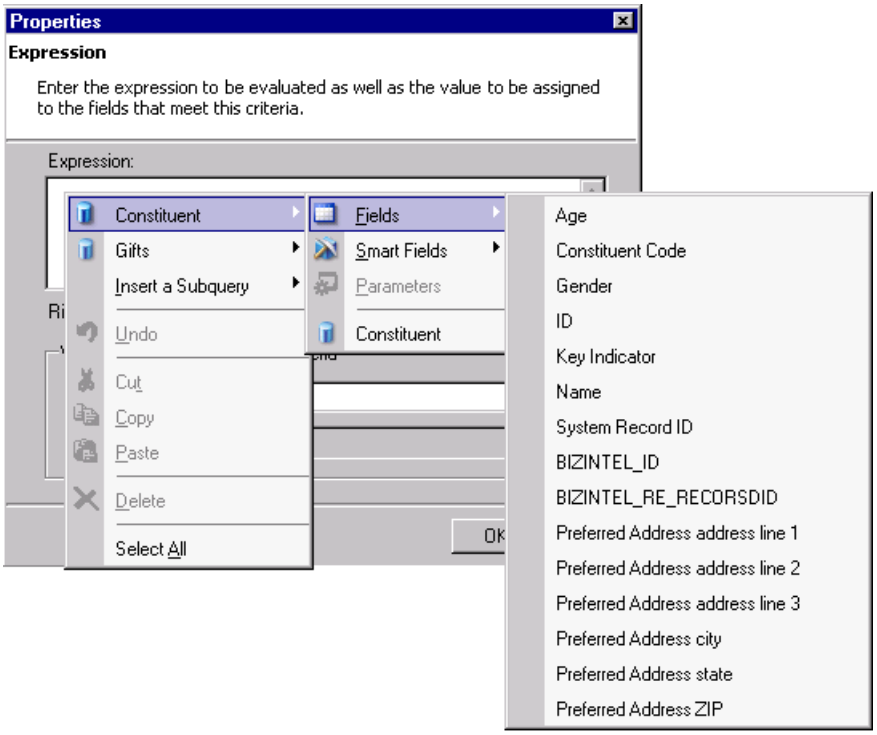
2. Select an **Output data type** for the field. When you create the condition for this field later in this procedure, the value you specify to enter for records that meet your condition criteria must be valid for the type you specify here.
   - **Currency** - Value can be any positive or negative numeric value. Currency values can include as many as four places to the right of the decimal. Values with more than four decimal places are rounded to the last number.
   - **Date** - Value must be a valid date; for example, “06-05-05.”
   - **Numeric** - Value must be numeric (can contain a decimal point).
   - **Integer** - Value must be negative or positive whole numbers.
   - **Text** - Value can be text or mixed value types (such as a date and a numeric value).
3. In the **Default value** frame, select the value that you want to appear in the field on records that do **not** meet the criteria you establish. When you select **NULL**, no entry appears in the field.

You can mark **Use this value** and enter a value, or mark **Use this field** and select a field whose value will populate the smart field on records that do not meet your criteria.

4. To create input parameters for the smart field, click **Add** at the bottom of the screen. The Expression screen appears.

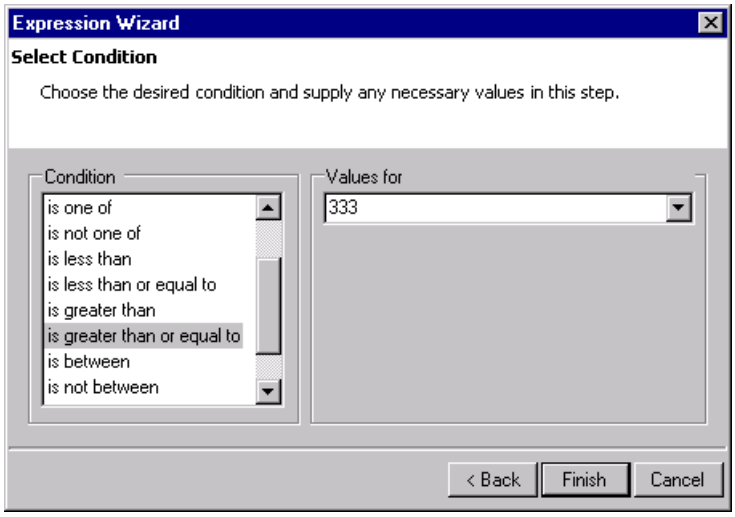


5. If you are familiar with creating SQL statements, you can enter text directly in the **Expression** box. Right-click in the box to view a list of fields in the target table you selected as well as any related tables.

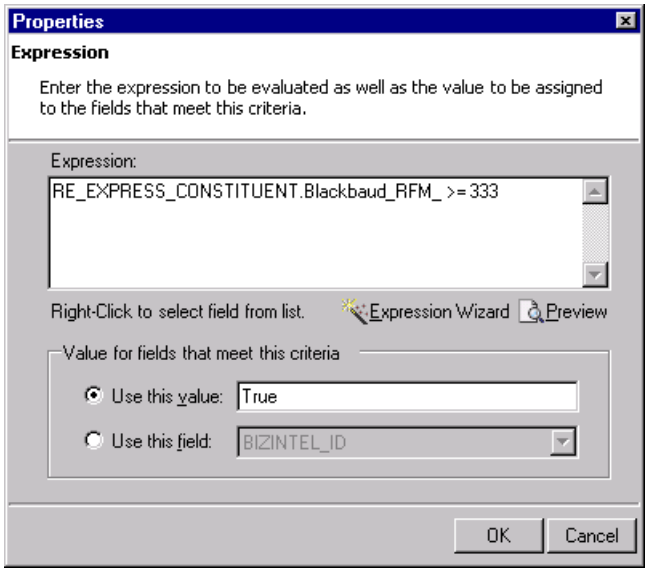


The data type you select for the smart field also restricts your options for setting a default value for records that do not meet your criteria. Any entry in the **Use this value** field must be valid for the output data type (for example, a date for a Date type field) and only fields with a matching data type appear in the **Use this field** dropdown.

6. When you select a field, it appears in the **Expression** box so you can use it in a SQL statement.
7. To use the Expression Wizard to build statements, on the Expression screen, click **Expression Wizard**. The Expression Wizard Select Field screen appears.
8. Select a field for which you want to create an expression. All fields in the selected target table and any related tables (including any other smart fields you have already created) are available.
9. Click **Next**. The Expression Wizard Select Condition screen appears.



10. Select a **Condition** and specify the **Values for** that condition. The available values vary depending on the selected condition. For more information about the available conditions, see “Expression and Selection Wizard Conditions” on page 84.
11. Click **Finish**. You return to the Expression screen.



12. Your expression now appears in the **Expression** box. When you click **Preview**, a message appears indicating how many records are selected by the expression.

    If on the Expression Wizard Select Field screen you selected a field from a table other than the target table, a *SQL Server* message appears informing you that the column prefix name does not match the table name used in the query. In this case, you need to create a subquery to join the tables. For more information about subqueries, see “Joining Tables With Subqueries” on page 279.

13. Enter the value that you want to appear in the table for fields that meet the criteria of this smart field. You can select the option to **Use this value** and enter the value.

    You can also select the option to **Use this field** and select a field from the table to use as the value when the condition you establish is true. For example, your condition may specify to include only gifts of the type “Pledge” or “Cash” and you may want to copy the value from the AMOUNT column to the smart field for these gifts.

14. Click **OK**. You return to the Criteria screen where your expression now appears in the box.

The data type for the smart field restricts your options for setting a field value for records that meet the criteria. The value for the field must be valid for the data type and only fields with values of the same type are available for the **Use this field** option.

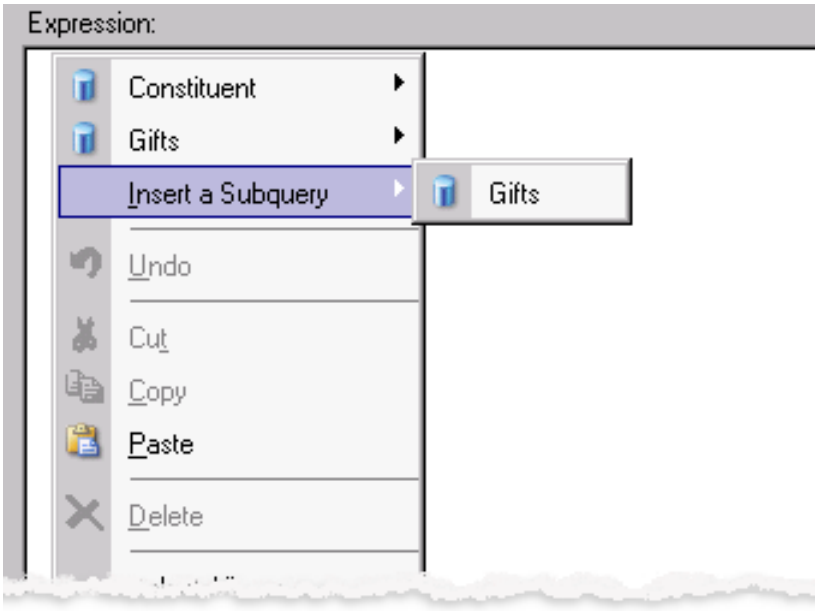
Joining Tables With Subqueries

When creating several types of items in ***The Information Edge***, including **Condition** or **Expression** smart fields and **Parameters**, you may want to use an expression to specify that a target table include information from a field in another table. If the target table has a relationship with the other table, you need to create a subquery which forms a join or link between the two tables. For example, the constituent table has a one to many relationship with the gift table because a constituent can have many gift records, but a gift record corresponds to only one constituent record.

If you create a smart field, view, or parameter with the constituent table as the target, and use an expression that pulls information from a gift table field, you must first join the tables by creating a subquery. If you do not join the tables first, a *SQL Server* message appears when you preview or run a statement.

Condition Properties
The column prefix 'RE_EXPRESS_GIFTS' does not match with a table name or alias name used in the query.
OK

To create a link between the tables, right-click in the **Expression** box and select **Insert a Subquery**. Tables with which your source table has a relationship appear.



After you create a subquery, you can add more information to the expression, depending on what result you are trying to achieve.

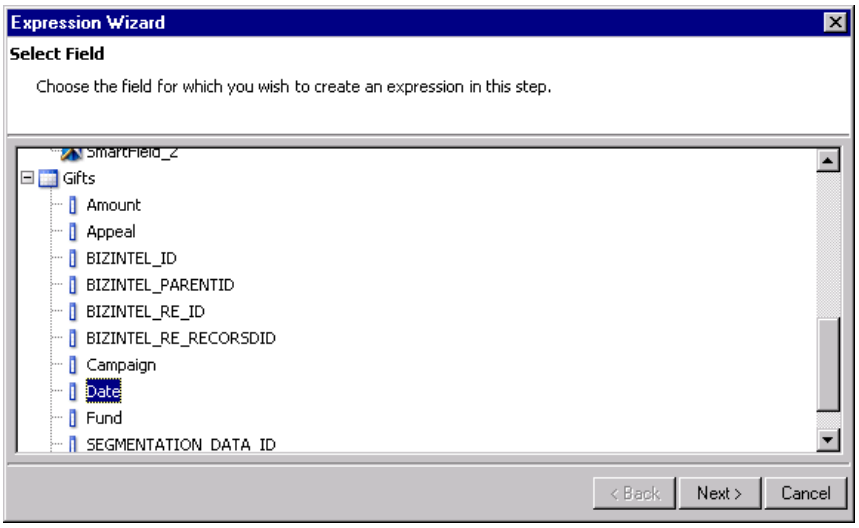
The following procedure is based on a scenario in which you would use a subquery to create a join between donor and gift tables when creating a **Condition** smart field.

➢ Joining data tables with subqueries

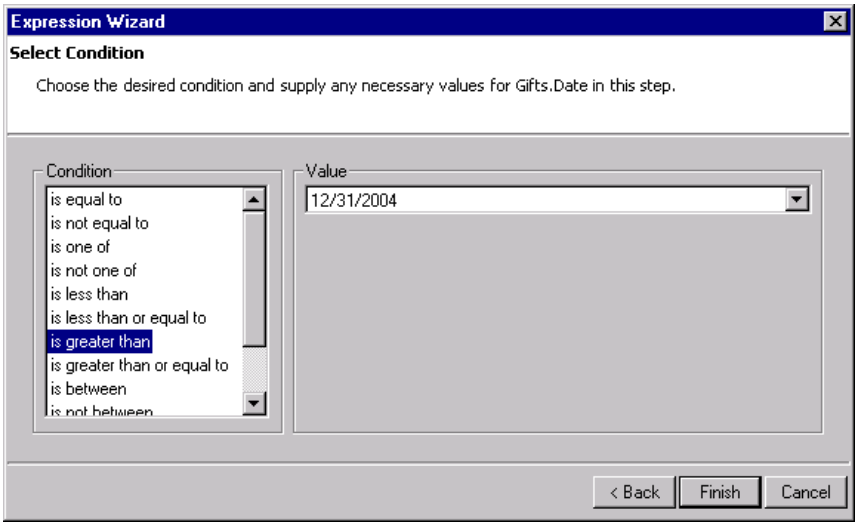
In this procedure we will create a condition smart field for the constituent table in an *RE:Express* data mart. As part of this smart field, we will include a condition that analyzes the gift date so we can include information on who has donated so far this year. Because the gift date is stored in the gift table, with which the constituent table has a one to many relationship, we need to create a join between the tables and then specify the criteria we will use to analyze the date.

1. In the tree view, under the data mart for which you want to create a smart field, right-click **Smart Fields**. Select **New Smart Field**. The Smart Field Wizard appears open to the General tab.
2. Name your smart field and click **Next**. The Type tab appears.
3. Select Miscellaneous in the **Category** field and select **Condition**.
4. Click **Next**. The Tables tab appears.
5. In the **Available tables** box, you select the table from which you want to use values that will be processed by this smart field. For this example, select the “Constituent” table as the target.
6. Click **Next**. The Criteria tab appears.

7. For this example, select an **Output Data type** of “Text”. Now we need to specify a default value for fields that do **not** meet the criteria we will specify later in this procedure. Select the **Use this value** option and enter “Not Current” as the value.
8. To create a condition, click **Add**. The Expression screen appears.
9. Click **Expression Wizard**. The Select Field screen appears.

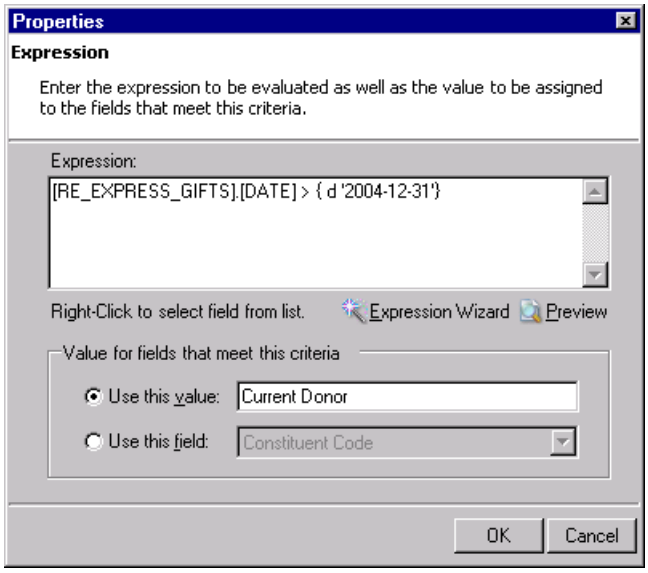


10. Under the **GIFTS** table, select DATE.
11. Click **Next**. The Select Condition screen appears.



12. In the **Condition** frame select “is greater than”. In the **Value** field enter 12/31/2004.

13. Click **Finish**. You return to the Expression screen, where your condition now appears.



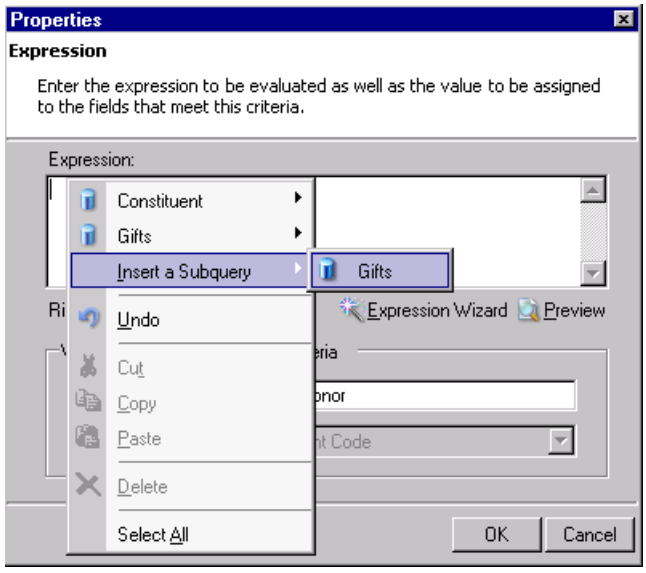
14. At the bottom of the screen, in the **Value for fields that meet this criteria** frame, select the **Use this value** option and enter "Current Donor." This is the value that will display in the table for fields that meet your criteria.
15. Click **Preview** to check your expression. A message appears.

Condition Properties
The column prefix 'RE_EXPRESS_GIFTS' does not match with a table name or alias name used in the query.
OK

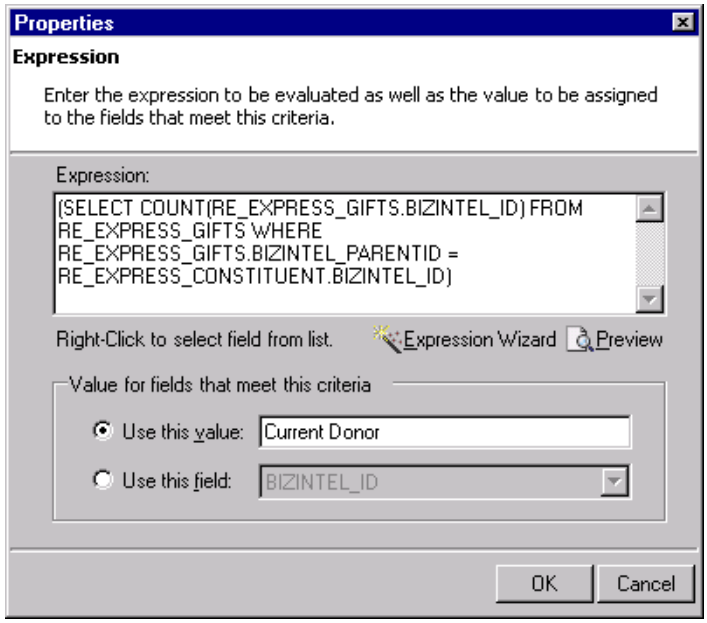
16. This message appears because the condition you created is querying on the Gift table, with which the target table, Constituents, has a one to many relationship. Because of this relationship, you will need to specify a subquery, which creates a join between the tables, and specify exact criteria for your condition.

    Click **OK** to return to the Expression screen.

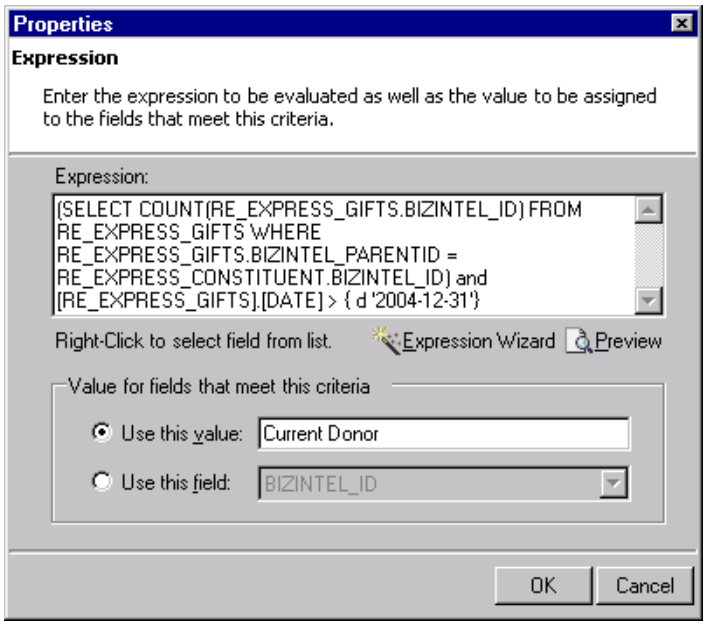
17. Delete the statement in the **Expression** box. Then right-click in the **Expression** box and select **Insert a Subquery**. Only tables with which the source table has a relationship are available, in this case only the **GIFTS** table. Select **GIFTS**.



The subquery expression appears.

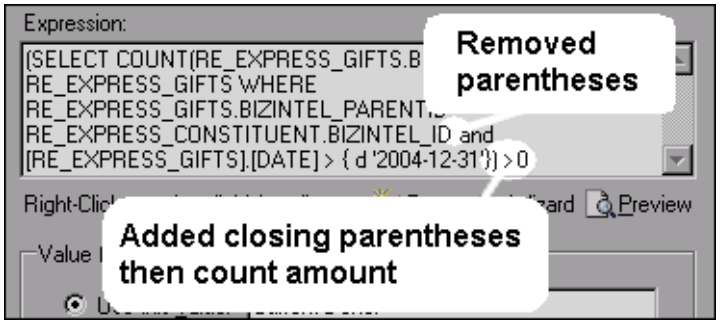


18. Now that you have created the join between the two tables, you must add the original statement specifying the date. Click **Expression Wizard** and on the Select Field screen, again select DATE from the **GIFTS** table. Click **Next** and on the Select Condition screen, specify "is greater than" 12/31/2004. Click **Finish** to return to the Expression screen.



The join statement is now followed by your condition statement. However, the full expression is not yet valid. Because the Wizard cannot predict what you are trying to achieve with your statement at this point, you need to make a few changes.

To validate this statement, we need to remove the closing parentheses after _CONSTITUENT.BIZINTEL_ID on the fourth line and add it to the end of the statement. This moves the date criteria inside the parentheses because we want it to affect the count of gift records. We then need to specify the actual count to close out the statement. In this case, we want to locate any gifts given this year so we include anything greater than zero. Your final statement looks like this:



19. Now that your expression is complete, click **OK**. The Conditions screen appears displaying the condition you created.
20. Click **Next**. The Name screen appears.
21. Click **Finish**. A message appears indicating that the field has been saved.

22. If you want to process the field at this time, click **Yes**. Depending on the number of records to process, this can take some time. If you do not want to process the field now, you can click **No** and process it later.

    You return to the console where the smart field now appears. After processing, the smart field is available for use in OLAP cube interactive reports, *RE:WriteBack* queries, and, if you have the optional module *Marketing Segmentation*, segmentations.

Contributor

Category: Fundraising

What it Does: A **Contributor** smart field indicates donors that have given within a specified date range.

When Would I use a Contributor Smart Field? Use this smart field when you want to create a field containing values of constituents who have given within a date range you specify. For example, you may want a field with values of donors between June and August.

Criteria: On the Criteria tab for a **Contributor** smart field, you must specify the date range for which you want to determine contributors.

Copy

Category: Miscellaneous

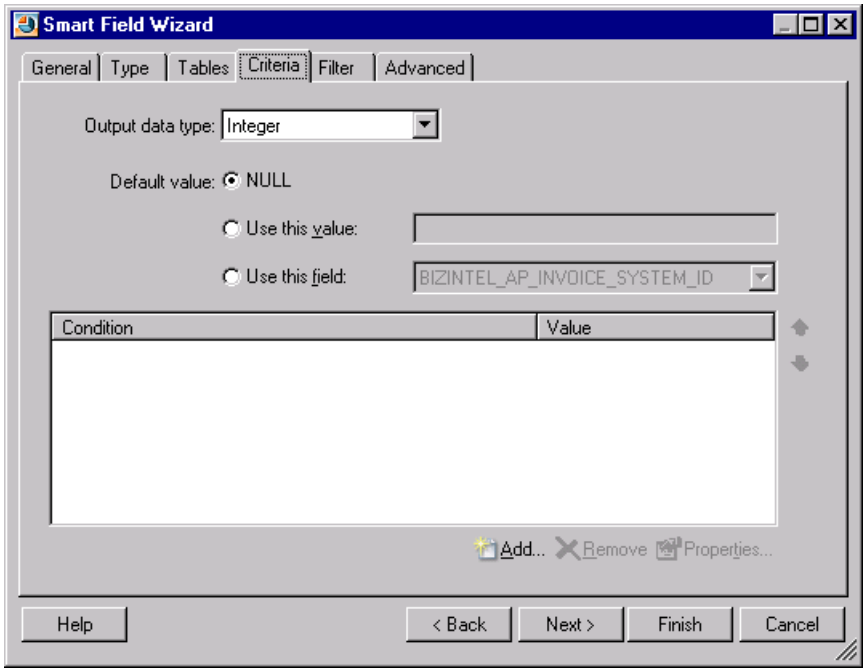
What it Does: A **Copy** smart field copies data from one table to another based on a field they have in common and a expression you specify.

When Would I use a Copy Smart Field? Use this smart field when you want to copy values from a field or fields into another field. For example, you may want to copy the constituent name onto the gifts table so that you can create a report that shows this information.

Criteria: On the Criteria tab for a **Copy** smart field, you must specify the information you want to copy, the table you want it copied to, and the criteria that determines onto which records in that table the information is copied. For more information, see the following procedure.

➢ Adding Copy smart field criteria

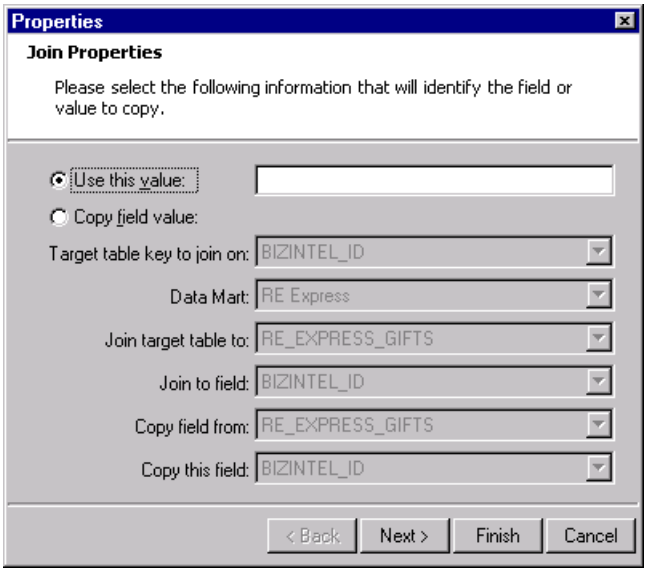
1. When creating a Copy smart field, select the Criteria tab.



2. Select an **Output data type** for the field. When you specify the information for this field to copy later in this procedure, the value you specify to copy for records that meet your criteria must be valid for the type you specify here.
   - **Currency** - Value can be any positive or negative numeric value. Currency values can include as many as four places to the right of the decimal. Values with more than four decimal places are rounded to the last number.
   - **Date** - Value must be a valid date; for example, “06-05-06.”
   - **Numeric** - Value must be numeric (can contain a decimal point).
   - **Integer** - Value must be negative or positive whole numbers.
   - **Text** - Value can be text or mixed value types (such as a date and a numeric value).
3. In the **Default value** frame, select the value that you want to appear in the field on records that do **not** meet the criteria you will later establish. When you select **NULL**, no entry appears in the field.

You can mark **Use this value** and enter a value, or mark **Use this field** and select a field whose value will populate the smart field on records that do not meet your criteria.

4. To specify the information you want this smart field to copy, click **Add** at the bottom of the screen. The Join Properties screen appears.



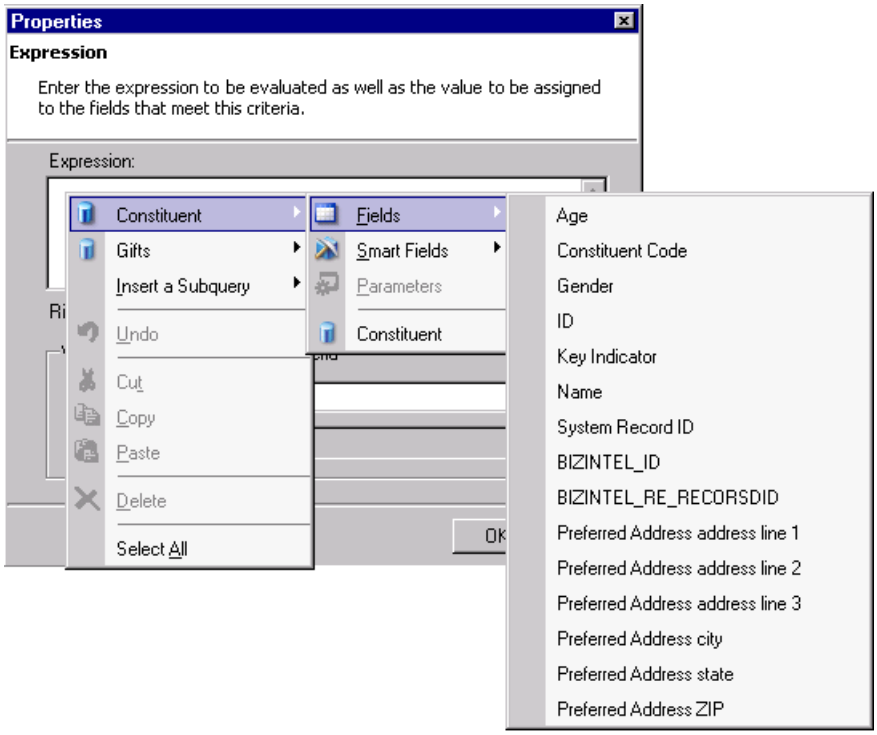
5. You can enter a value (must match the data type you selected previously), or select to copy the contents of a field.

   If you select to **Copy field value**, you must specify the key value in the target table which will form the basis for the join between tables. You must also select the data mart, the table your target table should be joined to, the join to field, the table the field should be copied from, and the field to be copied.

   You must then specify the criteria that will determine which records include the copied information. Those that do not meet the criteria will include the default value you specified earlier.

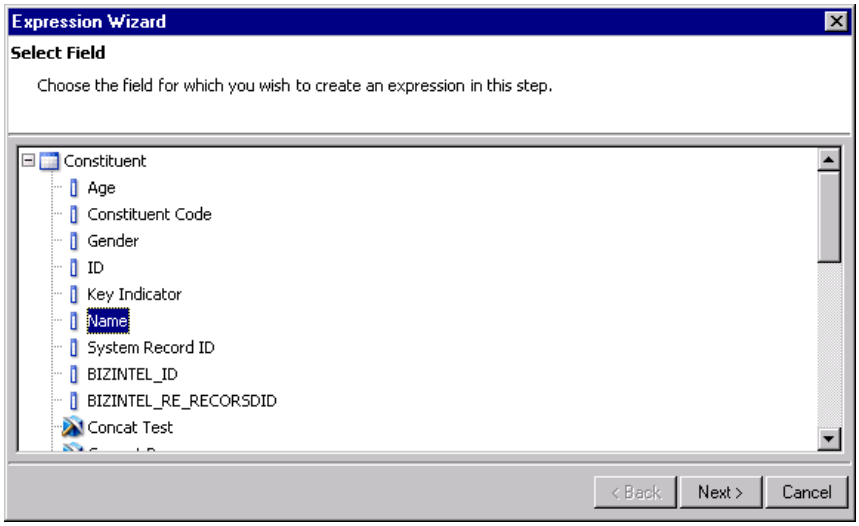
The data type you select for the smart field also restricts your options for setting a default value for records that do not meet your criteria. Any entry in the **Use this value** field must be valid for the output data type (for example, a date for a Date type field) and only fields with a matching data type appear in the **Use this field** dropdown.

6. Click Next. The Expression screen appears. If you are familiar with creating SQL statements, you can enter text directly in the **Expression** box. Right-click in the box to view a list of fields in the target table you selected as well as any related tables.

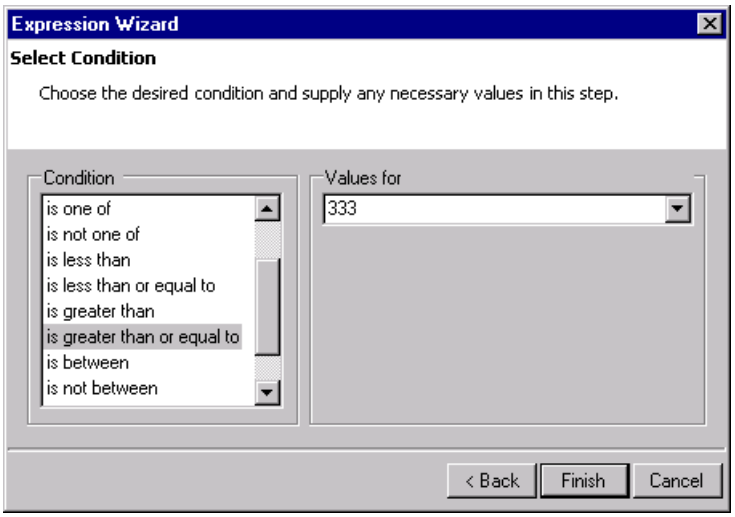


7. Previously created smart fields are indicated by an icon on the left. When you select a field, it appears in the **Expression** box so you can use it in a SQL statement.

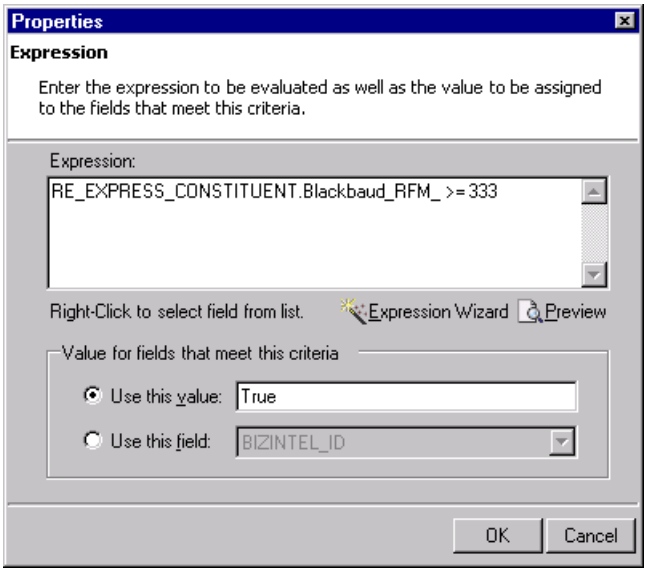
8. To use the Expression Wizard to build statements, on the Expression screen, click **Expression Wizard**. The Expression Wizard Select Field screen appears.



9. Select a field for which you want to create an expression. All fields in the selected target table and any related tables (including any other smart fields you have already created) are available.
10. Click **Next**. The Expression Wizard Select Condition screen appears.



11. Select a **Condition** and specify the **Values for** that condition. The available values vary depending on the selected condition. For more information about the available conditions, see “Expression Wizard” on page 83.
12. Click **Finish**. You return to the Expression screen.



13. Your expression now appears in the **Expression** box. When you click **Preview**, a message appears indicating how many records are selected by the expression.

If on the Expression Wizard Select Field screen you selected a field from a table other than the target table, a *SQL Server* message appears informing you that the column prefix name does not match the table name used in the query. In this case, you need to create a subquery to join the tables. For more information about subqueries, see "Expression Smart Field Examples" on page 296.

The data type for the smart field restricts your options for setting a field value for records that meet the criteria. The value for the field must be valid for the data type and only fields with values of the same type are available for the **Use this field** option.

14. Enter the value that you want to appear in the table for fields that meet the criteria of this smart field. You can select the option to **Use this value** and enter the value.

    You can also select the option to **Use this field** and select a field from the table to use as the value when the condition you establish is true. For example, your condition may specify to include only gifts of the type "Pledge" or "Cash" and you may want to copy the value from the AMOUNT column to the smart field for these gifts.

15. Click **OK**. You return to the Criteria screen where your expression now appears in the box.

Count

Category: Statistical

What it Does: A **Count** smart field counts the number of records in a one-to-many relationship.

When Would I use a Count Smart Field? Use this smart field when you want to count the records in a one-to-many field. For example, you may want to count the number of records in the gift table.

Criteria: On the Criteria tab for a **Count** smart field, you must specify the one-to-many field containing the records you want to count.

If you mark the **Count only distinct values** checkbox, duplicate values are eliminated before the count is performed.

Custom RFM

Category: Fundraising

What it Does: The **Custom RFM** smart field enables you to segment donors by comparing recency, frequency, and monetary values of gifts with other values you specify.

When Would I use a Custom RFM Smart Field? You could use this smart field as the basis for a marketing segmentation. For example, you can create a **Custom RFM** smart field that segments donors according to whether they have given one, or two or more gifts of a certain amount in the last three months. You may then want to use this information to target specific segments with different mailings.

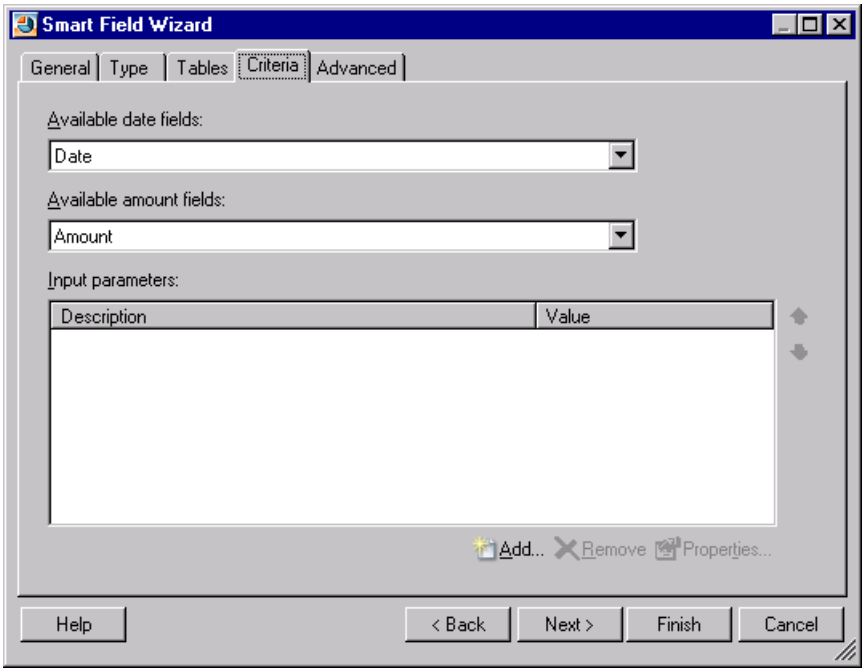
Criteria: On the Criteria tab for a **Custom RFM** smart field, you must specify the date and amount ranges you will use to group your donors.

For more information, see the following procedure.

➢ Adding Custom RFM smart field criteria

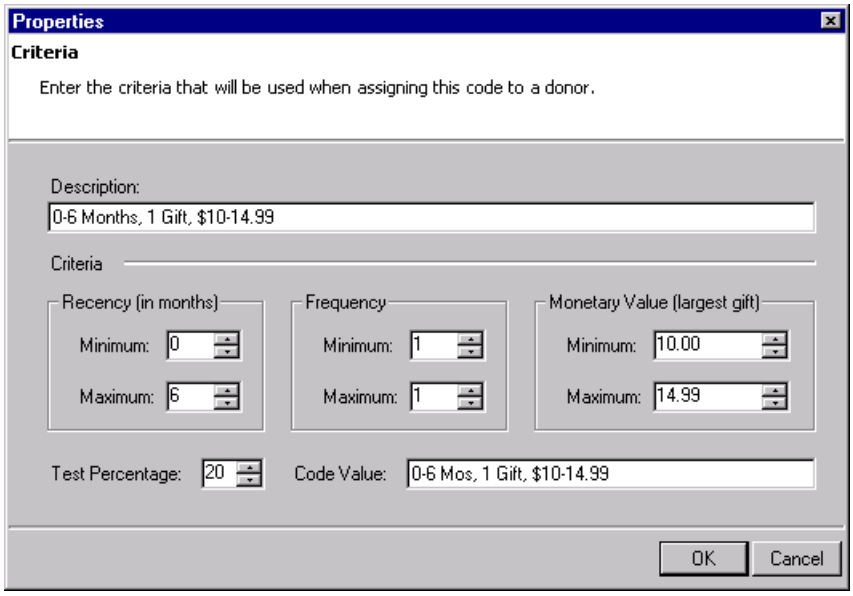
For this procedure we will create a Custom RFM smart field that segments donors based on a recency of several ranges, a frequency of one or two or more gifts, and several ranges of monetary values.

1. When creating a **Custom RFM** smart field, select the Criteria tab.



2. From the **Available date fields** dropdown, select the date field which will be used to determine recency scores in this smart field.
3. From the **Available amount fields** dropdown, select the gift amount field which will determine the monetary amounts portion of the Custom RFM score.

4. This **Input parameters** frame lists segments you create to group your donors. To create the first segment, click **Add**. The Criteria screen appears.



5. In the **Description** field, enter the text that will identify this segment on the Input Parameters screen. In this case we are creating a segment to include constituents with an RFM history of "0-6 Months, 1 Gift, $10-14.99".

   Specify the **Minimum** and **Maximum** values for **Recency**, **Frequency**, and **Monetary Value** of gifts that will qualify constituent records to be included in this segment. For example, this segment includes records with a **Recency** (measured in months) minimum of 0 and maximum of 6, a **Frequency** (number of gifts) minimum and maximum of 1, because this segment is for donors who have given only one gift in the last six months, and a **Monetary Value** minimum of $10.00 and maximum of $14.99.

   In the **Test Percentage** field, specify a percentage of records to be included in a test segmentation. For example, if you enter "20" the test segmentation will include a random sampling of records equal to twenty percent of the total records in the segment. Leave "100" as the entry if you want all records that qualify for this segment to be included in it.

   In the **Code Value** field, enter the value that will appear in the table for records included in this segment.

6. Click **OK**. You return to the Criteria tab. The segment you created appears in the **Input parameters** box.

7. To create additional segments, click **Add** again. For example, you can add other segments using the following parameters:

0-6 Months, 2+ Gifts, $10-14.99
0-6 Months, 1 Gift, $15-24.99
0-6 Months, 2+ Gifts, $15-24.99
0-6 Months, 1 Gift, $25-49.99
0-6 Months, 2+ Gifts, $25-49.99
0-6 Months, 1 Gift, $50-99.99
0-6 Months, 2+ Gifts, $50-99.99

You can also add similar frequency and monetary parameters for 7-12 months, 13-24 months, and 25-36 months.

Date Interval

Category: Miscellaneous

What it Does: A **Date Interval** smart field determines how many days, weeks, months, or years have elapsed between two dates.

When Would I use a Date Interval Smart Field? Use this smart field when you want to determine the number of days, weeks, months, or years between two dates. For example, you may have created n(th) Item smart fields to find the second to last and last gifts and you could use a Date Interval smart field to determine the interval between the two. Or, if you have First Gift and Latest Gift smart fields, you may want to use a Date Interval field to learn the number of weeks between them.

Criteria: On the Criteria tab for a **Date Interval** smart field, you must establish a Starting Date and Ending Date to create a date range, and then select whether you want to measure the difference between them in days, weeks, months, or years.

Days Since

Category: Fundraising

What it Does: A **Days Since** smart field calculates the number of days since a donor last gave.

When Would I use a Days Since Smart Field? Use this smart field when you want to learn how many days have elapsed since selected donors have last donated to your organization.

Criteria: On the Criteria tab for a **Days Since** smart field, you must select a date which will form the basis for the field's value.

Decile

Category: Statistical

What it Does: A **Decile** smart field divides data from a selected field into ten groups.

When Would I use a Decile Smart Field? Use this smart field when you want to divide data into ten distinct groups. For example, you may use a decile field as part of a marketing segmentation to divide the mailing into ten segments.

Criteria: On the Criteria tab for a **Decile** smart field, you must select a field containing data you want to break into ten groups. You must indicate whether you want the groups to be sorted in ascending or descending order and whether to include zero value gifts in the smart field.

Depreciation

Category: Financial

What it Does: A **Depreciation** smart field calculates the depreciation of an asset for a specific time period using the double-declining balance method, in which double the straight-line depreciation amount is taken the first year, and then that same percentage is applied to the undepreciated amount in subsequent years. You can specify a different method to use.

When Would I use a Depreciation Smart Field? Use this smart field when you want to determine the rate of depreciation for an asset.

Criteria: On the Criteria tab for a **Depreciation** smart field, you must select the initial **Cost** of the asset, the **Salvage** value of the asset at the end of its useful life, the length of the useful **Life** of the asset, the **Period** for which the asset's value will be depreciated, and the **Factor** rate at which the balance declines.

Effective Annual Interest Rate

Category: Financial

What it Does: An **Effective Annual Interest Rate** smart field calculates this rate based on the nominal annual interest rate and number of compounding periods per year.

When Would I use an Effective Annual Interest Rate Smart Field? Use this smart field when you want to determine the actual annual interest rate that accrues, after taking into consideration the effects of compounding (when compounding occurs more than once per year).

Criteria: On the Criteria tab for an **Effective Annual Interest Rate** smart field, you must specify the **Nominal** interest rate as a percent or decimal, and the total number of compounding **Periods** per year.

Expression

Category: Miscellaneous

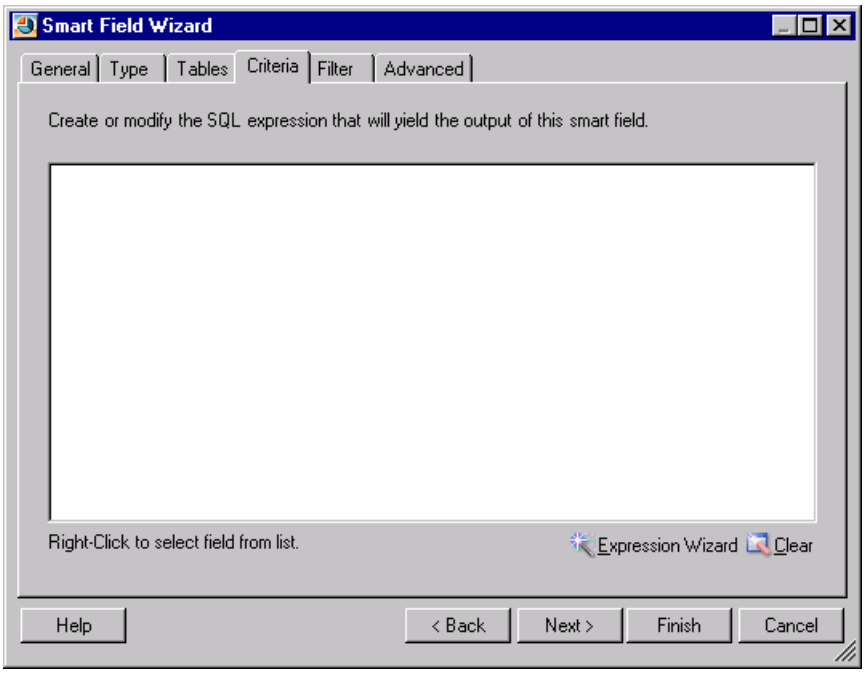
What it Does: An **Expression** smart field enables you to create a SQL statement that derives a value which populates the smart field.

When Would I use an Expression Smart Field? Use this smart field when you need a derived value as a field entry. For example, you may want to determine how much of a percentage each individual donor's gifts account for of the total gifts to your organization, and include this information in a donor table. The smart field evaluates a SQL expression to derive the value of the field. To view some examples of Expression smart fields, see "Expression Smart Field Examples" on page 296.

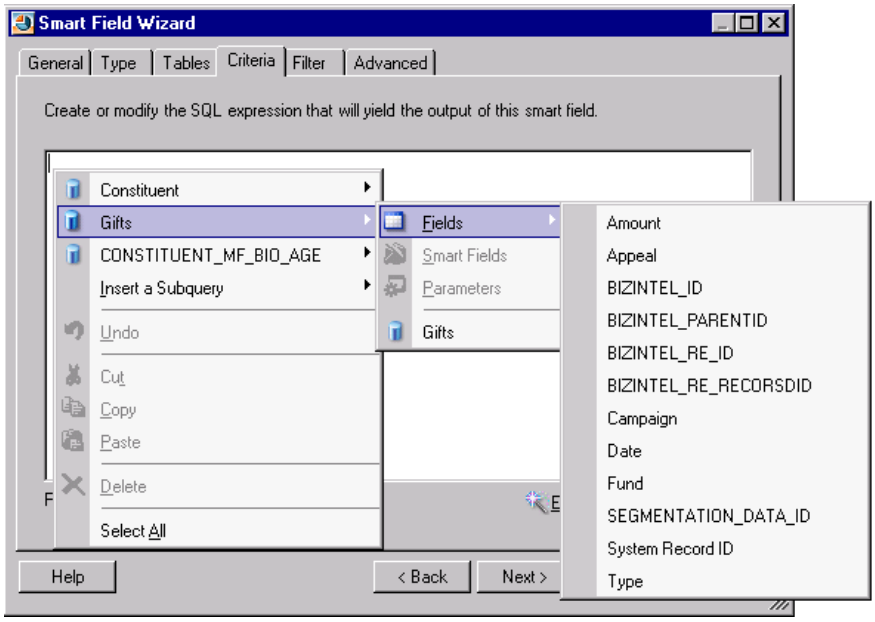
Criteria: On the Criteria tab for an **Expression** smart field, you must create the SQL statement that will yield the output for the smart field. You can use the Expression Wizard to help add conditions your SQL expressions.

➢ Adding Expression smart field criteria

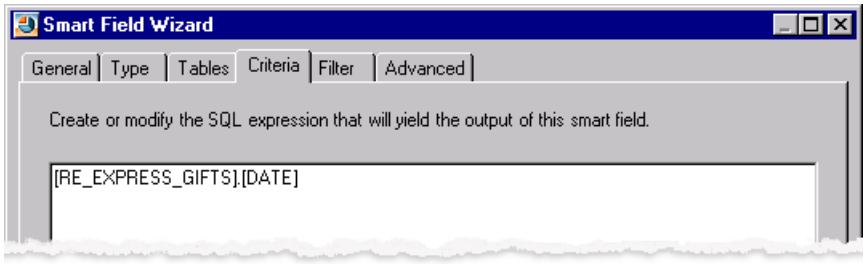
1. When creating an Expression smart field, select the Criteria tab.



2. You can enter text directly in the **SQL Expression** box. Right-click in the box to view a list of fields in the target table you selected as well as any related tables.



3. When you select a field, it appears in the **SQL Expression** box so you can use it in a SQL statement.



   If you want to use conditions in your statement, the Expression Wizard is available. For more information about using the Expression Wizard, see “Expression Wizard” on page 83.

4. Complete the SQL statement by entering text in the **SQL Expression** box.

   To complete some expressions, you may need to create a subquery to join fields from different tables. For more information about subqueries, see “Joining data tables with subqueries” on page 280.

Expression Smart Field Examples

The Expression Smart Field builds a SQL statement using the target table you select and an expression you enter. The basic syntax for this SQL statement is:

```
SELECT <your expression> FROM <target table>
```

Your expression can be any valid SQL statement that can be used in a SELECT clause for the target table. Two examples of possible Expression Smart Fields are included below.

Using a SQL Server Function to Return a Value

The SQL Server function **DATEADD**() enables you to add a specified interval to a date field. In this example, we use DATEADD() to build an Expression Smart Field called **OneYearLater** that returns a date one year after the RE_EXPRESS_GIFTS.DATE.

DATEADD(year, 1, RE_EXPRESS_GIFTS.DATE)

BIZINTEL_ID	AMOUNT	DATE	OneYearLater
1	500.00	1/1/**2004**	1/1/**2005**
2	400.00	1/2/**2005**	1/2/**2006**
3	300.00	2/1/**2005**	2/1/**2006**

Refer to your *SQL Server* documentation for a list of available functions.

Use a SELECT Statement to Populate the Expression Field

You can use a SQL statement that returns a single value as the source of your expression. Here, we calculate the total number of gifts for a constituent.

```
(SELECT
   COUNT(RE_EXPRESS_GIFTS.BIZINTEL_ID)
FROM
   RE_EXPRESS_GIFTS
WHERE
   RE_EXPRESS_GIFTS.BIZINTEL_RE_RECORSDID =
   RE_EXPRESS_CONSTITUENT.BIZINTEL_RE_RECORSDID)
```

When this smart field is processed, the following SQL statement is executed:

```
SELECT
   SELECT
      COUNT(RE_EXPRESS_GIFTS.BIZINTEL_ID)
   FROM
      RE_EXPRESS_GIFTS
   WHERE
      RE_EXPRESS_GIFTS.BIZINTEL_RE_RECORSDID =
      RE_EXPRESS_CONSTITUENT.BIZINTEL_RE_RECORSDID)
FROM
   RE_EXPRESS_CONSTITUENT
```

In this example, the SELECT clause uses the COUNT() function to return a count of the non-null values in the BIZINTEL_ID field of the RE_EXPRESS_GIFTS table.

The WHERE clause is used to restrict the count to a specific constituent, identified by the BIZINTEL_RE_RECORSDID field in the RE_EXPRESS_CONSTITUENT table by joining it to the foreign key field BIZINTEL_RE_RECORSDID in the RE_EXPRESS_GIFTS table.

First Gift

Category: Fundraising

What it Does: A **First Gift** smart field indicates the first gift given by a donor in a specified date range.

When Would I use a First Gift Smart Field? Use this smart field when you want to determine when constituents gave their first gifts in a date range.

Criteria: On the Criteria tab for a **First Gift** smart field, you must select the date on which the field will be based, and whether the field should include all records in the field or only those within a specific range you set.

Future Value

Category: Financial

What it Does: A **Future Value** smart field calculates the value of an annuity based on periodic fixed payments and a fixed interest rate.

When Would I use a Future Value Smart Field? Use this smart field when you want to determine the value at some point in the future of a present amount of money.

Criteria: On the Criteria tab for a **Future Value** smart field, you must select the **Per Period** interest rate, whether it should be based on a field or value, and whether it should be a percentage or decimal.

In the **Per period** field, enter “1” if the rate is per period; otherwise, enter a field or value that will determine the per period rate.

In the **Payment Periods** field, specify the number of payments in an annuity.

In the **Payment amount** field, enter the payment made each period. You can select either field or value. When you use a field, payments can be treated as either credit (positive) or debit (negative) amounts. This amount cannot change during the life of the annuity.

In the **Present value** field enter the lump sum amount that a series of future payments is worth at the present time. Again, you select either a field or value.

Specify an option for when the payments for this annuity are due.

Interest Payment

Category: Financial

What it Does: An **Interest Payment** smart field calculates the interest payment for a given period of an annuity, based on periodic fixed payments and a fixed interest rate.

When Would I use an Interest Payment Smart Field? Use this smart field when you need to determine the amount of the interest payment for an investment.

Criteria: On the Criteria tab for an **Interest Payment** smart field, in the **Payment Periods** field, you must specify the number of payments in an annuity.

In the **Payment amount** field, enter the payment made each period. You can select either field or value. When you use a field, payments can be treated as either credit (positive) or debit (negative) amounts. This amount cannot change during the life of the annuity.

In the **Present value** field enter the lump sum amount that a series of future payments is worth at the present time. Again, you select either a field or value.

In the **Future value** field enter the cash balance you want to attain after the last payment is made. Again, you select either a field or value.

In the **Guess** field, enter your best guess for what the rate will be.

Specify an option for when the payments for this annuity are due.

Interest Rate

Category: Financial

What it Does: An **Interest Rate** smart field calculates the interest rate per period for an annuity.

When Would I use an Interest Rate Smart Field? Use this smart field when you need to determine the interest rate per period.

Criteria: On the Criteria tab for an **Interest Rate** smart field, in the **Payment Periods** field, you must specify the number of payments in an annuity.

In the **Payment amount** field, enter the payment made each period. You can select either field or value. When you use a field, payments can be treated as either credit (positive) or debit (negative) amounts. This amount cannot change during the life of the annuity.

In the **Present value** field enter the lump sum amount that a series of future payments is worth at the present time. Again, you select either a field or value.

In the **Future value** field enter the cash balance you want to attain after the last payment is made. Again, you select either a field or value.

In the **Guess** field, enter your best guess for what the rate will be.

Specify an option for when the payments for this annuity are due.

Key Value

Category: Miscellaneous

What it Does: When used with the *Warehouse* feature of ***The Information Edge*** (available in the Enterprise version), a **Key Value** smart field enables you to locate donors who appear in different data marts, and have them appear as one row in the warehouse so you can more effectively analyze those records.

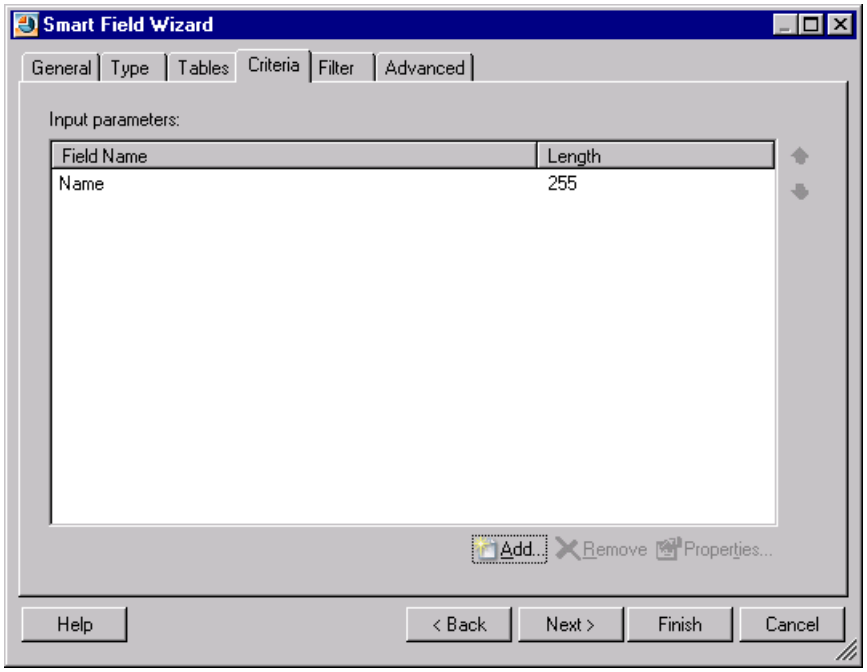
When Would I use a Key Value Smart Field? Use this smart fields when you want to compare data from different marts in a warehouse. For example, you may have a data warehouse containing a ticketing data mart and a constituent data mart. You can create a **Key Value** smart field in each data mart that uses the same criteria. This enables you to see which constituents are present in both marts. For more information key values in data warehouses, see "Key Values" on page 260.

Criteria: On the Criteria tab for a **Key Value** smart field, you must select the field which will contain your key value across marts, and enter the number of characters that will be used to determine a match.

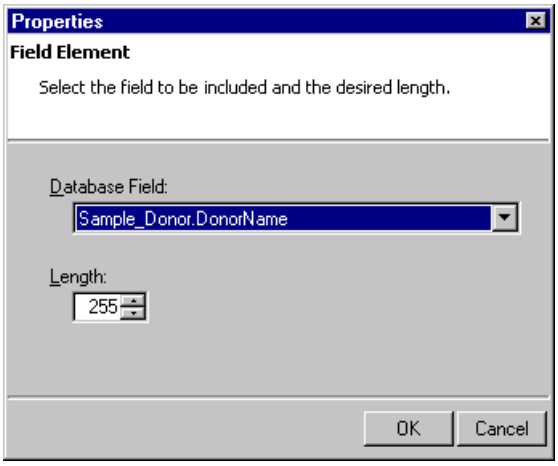
For more information, see the following procedure.

➢ **Adding Key Value smart field criteria**

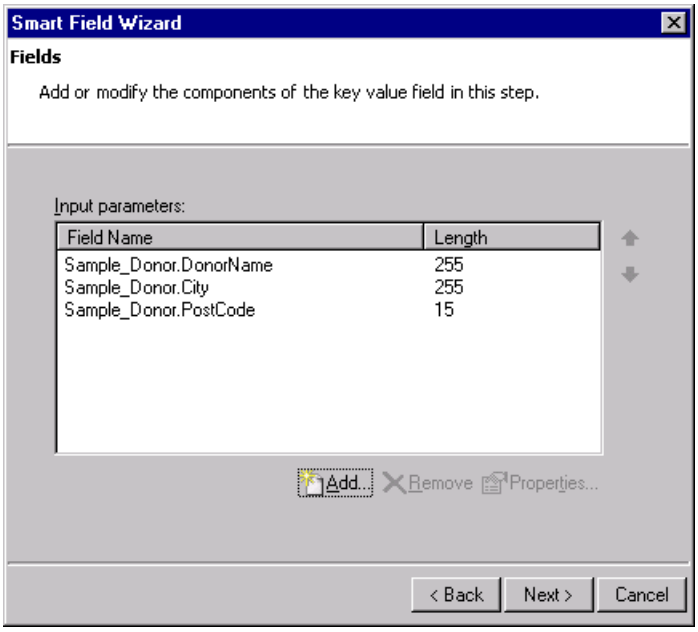
1. When creating a **Key Value** smart field, select the Criteria tab.



2. Click **Add** to specify a key value component. The Field Element screen appears.



3. Enter the **Database Field** for which you are establishing the key value. For example, you will probably want to use donor name as one of the components of your key value. Enter the **Length** in characters you want the program to examine for the field. For example, if you enter 255, the program will include a key value consisting of the first 255 characters of the donor name field.
4. Click **OK**. You return to the Fields screen where your key value now appears.



You may want to specify other values such as address information as elements for your field.

Latency

Category: Fundraising

What it Does: A **Latency** smart field returns the length of time between child records for selected time range.

When Would I use a Latency Smart Field? Use this smart field when you want to determine the length of time between gifts from constituents.

Criteria: On the Criteria tab for a **Latency** smart field, you must first specify the date field to be used and whether all records will be included or only those within a specified date range.

Then you must select an **Interval type** (days, weeks, etc.). Finally, specify whether this interval should be between first and last gifts or between consecutive gifts. If you choose consecutive, specify whether the list of gifts should show the shortest or longest interval.

Latest Gift

Category: Fundraising

What it Does: A **Latest Gift** smart field indicates the most recent gift given by a donor in a specified date range.

When Would I use a Latest Gift Smart Field? Use this smart field when you want to determine when donors gave most recently.

Criteria: On the Criteria tab for a **Latest Gift** smart field, you must specify the date field to be used and whether all records will be included or only those within a specified date range.

List

Category: Miscellaneous

What it Does: A **List** smart field creates a comma separated list of values.

When Would I use a List Smart Field? Use this field in tandem with a **Concatenation** smart field to list a donor name followed by each appeal she has donated to, separated by commas.

Criteria: On the Criteria tab for a **List** smart field, you must select a field from which you want to create a comma separated list of values.

LYBUNT

Category: Fundraising

What it Does: A **LYBUNT** smart field indicates donors that gave “Last Year But Unfortunately Not This Year.”

When Would I use a LYBUNT Smart Field? Use this field to flag donors who gave last year but not this year.

Criteria: On the Criteria tab for a **LYBUNT** smart field, you must specify the date field to be used, and the start date and end date for your "This Year" date range.

Maximum

Category: Statistical

What it Does: A **Maximum** smart field selects the greatest value for a field in a one-to-many relationship.

When Would I use a Maximum Smart Field? Use this field to flag the maximum gifts from your donors.

Criteria: On the Criteria tab for a **Maximum** smart field, you must select the field for which you want to select the greatest value.

Median

Category: Statistical

What it Does: A **Median** smart field selects the median value for a field in a one-to-many relationship.

When Would I use a Median Smart Field? Use this field to flag the median gifts from your donors.

Criteria: On the Criteria tab for a **Median** smart field, you must select the field for which you want to select the median value.

Minimum

Category: Statistical

What it Does: A **Minimum** smart field selects the lowest value for a field in a one-to-many relationship.

When Would I use a Minimum Smart Field? Use this field to flag the lowest value gifts from your donors.

Criteria: On the Criteria tab for a **Minimum** smart field, you must select the field for which you want to select the lowest value.

Mode

Category: Statistical

What it Does: A **Mode** smart field returns the most frequently occurring value for a field in a one to many relationship.

When Would I use a Mode Smart Field? Use this field to flag the most frequently given gift amount from your donors.

Criteria: On the Criteria tab for a **Mode** smart field, you must select the field for which you want to select the most frequently occurring value.

Monitored Field Query

Category: Miscellaneous

What it Does: Monitored fields enable you to track changes to your data over time. A **Monitored Field Query** smart field tracks the value of a monitored field during a time period you specify. Additionally, this smart field enables you to move information from the monitored field table onto the parent table.

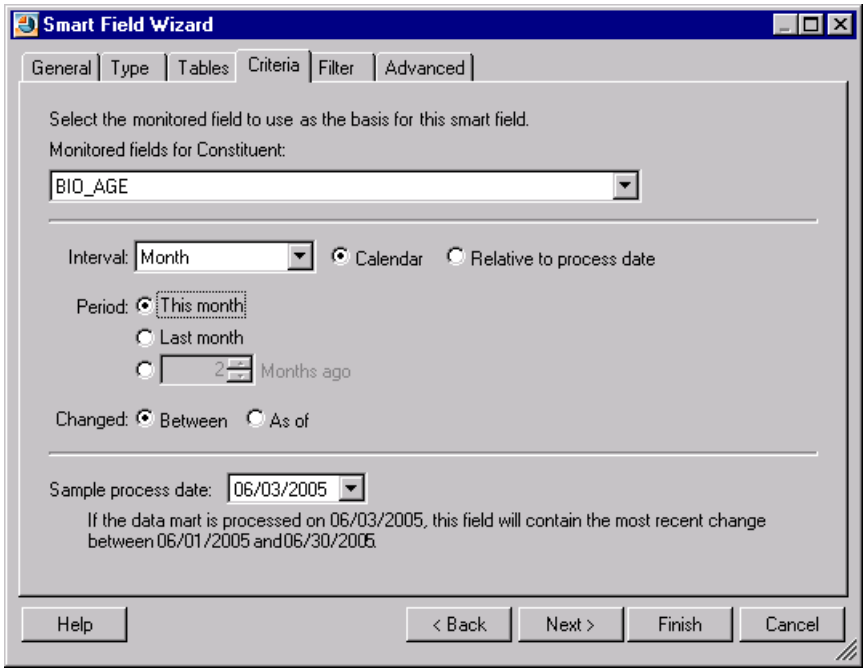
When Would I use a Monitored Field Query Smart Field? Use this smart field when you want to discover trends in your data based on changes to a monitored field over time.

Criteria: On the Criteria tab for a **Monitored Field Query** smart field, you must select the monitored field on which this smart field will be based, and specify the dates which will be used to compare changes in the data.

For more information, see the following procedure.

➢ **Adding Monitored Field Query smart field criteria**

1. When creating a Monitored Field Query smart field, select the Criteria tab.



2. Select the monitored field on which this smart field will be based.

3. Select a date **Interval**. For week, month, quarter, or year intervals, mark the **Calendar** option if you want to base them on calendar periods or the **Relative to process date** option if you want them to be relative to the date a data mart is processed.

   Select a **Period** based on your **Interval** entry.

4. Specify whether the date range should take place **Between** two dates, or **As of** a specific date. For more information about these options, see the next section.

5. When you make any selection, you can enter a **Sample process date** at the bottom of the screen. The sample text shows how dates are processed according to your selections.

Monitored Field Query Date Processing

The Monitored Field Query smart field is based on a field you specified as a monitored field. For example, you can create a "Donor Level" field that separates donors into bins based on their total giving, and specify that it be a monitored field. You can then create Monitored Field Query smart fields defined as **Donor Level This Month** and **Donor Level Last Month**.

The fields are updated each time you process the data mart. So, if you process the data mart for the first time on 6/30, you may see:

ID	Name	Donor Level This Month	Donor Level Last Month
1	Joe Smith	Silver	
2	Jane Smith	Gold	

If Joe moves up to the Gold level in July, while Jane stays at the same level, when the data mart is processed on 7/30 you would see:

ID	Name	Donor Level This Month	Donor Level Last Month
1	Joe Smith	Gold	Silver
2	Jane Smith		Gold

If both donors stay at the same level in August, and the data mart is processed on 8/30, you have:

ID	Name	Donor Level This Month	Donor Level Last Month
1	Joe Smith		Gold
2	Jane Smith		

Calendar vs. Relative to Process Date

You can select a time period to monitor based on numerous intervals. The available **Period** options depend on the selected **Interval**.

When you select any interval except "day," two additional options are available.

- **Calendar** specifies that the intervals are based on calendar periods.
- **Relative to process date** specifies that the periods are relative to the date a data mart is processed.

For example, you may process the data mart on 06/20. If you select an **Interval** of "Months," a **Period** of "This Month," and mark the **Calendar** option, the period would be 6/01 to 6/30. If you mark the **Relative to process date** option, the period would be 05/21 to 06/20 (the process date is considered the last day of this month).

You can also use ranges based on any number of days, weeks, months, quarters, or years. This enables you to track changes over time periods such 30 days ago, 60 days ago, or 90 days ago.

Between vs. As of

For every interval except "Day," you can specify whether a record should be included in the smart field if it changed **Between** two dates, or changed **As of** a specific date. **Between** uses both a start and end date, while **As of** uses only an end date. For example, if the process date is 06/20:

- When you select **This Month** and **Between**, the field is populated only if the Date Changed is between 06/01 and 06/30.
- When you select **This Month** and **As of**, the field contains the most recent change as of 06/30.

Based on the following data in the monitored field:

	Previous Value	Value	Date Changed
Joe Smith		Silver	05/30/2005
Jane Smith		Bronze	05/30/2005
Joe Smith	Silver	Gold	06/29/2005

Processing on 06/30 yields the following in a Monitored Field Query smart field:

ID	Name	Between This Month	As of This Month
1	Joe Smith	Gold	Gold
2	Jane Smith		Bronze

Because Joe has a **Date Changed** between 6/01 and 6/30, his **Between This Month** value is Gold. Because this is also his latest change prior to 6/30, his **As Of This Month** value is also Gold.

Jane has no **Date Changed** that falls into the **Between This Month** criteria, so the value is empty. However, she does have a change prior to 6/30 (her initial value of Bronze on 5/30) so her **As Of This Month** value is set to Bronze.

Another point to consider in date processing is that the latest change in a period is always used. So based on the following data:

	Previous Value	Value	Date Changed
Joe Smith	Silver	Gold	07/25/2005
Joe Smith	Gold	Platinum	07/30/2005

Processing on 7/31, would yield:

ID	Name	Between This Month	As of This Month
1	Joe Smith	Platinum	Platinum

Remember, you can always enter a **Sample process date** to see how your selections will affect processing.

Net Present Value

Category: Financial

What it Does: A **Net Present Value** smart field calculates the net present value of an investment based on a series of periodic cash flows and a discount rate.

When Would I use a Net Present Value Smart Field? Use this smart field when you want to determine the present value of an investment.

Criteria: On the Criteria tab for a **Net Present Value** smart field, you must specify the information that will determine the net present value of investments.

In the **Interest rate** field, indicate the discount rate to apply to this investment.

In the **per period** field, you can specify to use a "Value" and enter "1" if the interest rate is the per period rate. Otherwise enter the value or field to use when determining the per period rate.

In the **Investment amount** field, select the field that identifies the initial cost of the investment.

In the **Cash flows** field, select a field to identify values to use for periodic cash flows.

In the **Order cash flows by** field, select a date field that will be used to sort periodic cash flows in the order in which they were received.

If there is a field that determines whether the cash flow is irregular, mark the **Irregular cash flow** checkbox. Choose the field and the appropriate value for the field.

Specify an option for when the payments for this investment occur.

Non Contributor

Category: Fundraising

What it Does: A **Non Contributor** smart field indicates donors that have not given within a specified date range.

When Would I use a Non Contributor Smart Field? Use this smart field when you want to determine constituents in your database who are not currently giving.

Criteria: On the Criteria tab for a **Non Contributor** smart field, you must select a date field and date range to use when determining non contributor donors.

Number of Periods

Category: Financial

What it Does: A **Number of Periods** smart field calculates the number of periods for an annuity based on periodic fixed payments and a fixed interest rate.

When Would I use a Number of Periods Smart Field? Use this smart field when you want to determine the number of periods for an annuity.

Criteria: On the Criteria tab for a **Number of Periods** smart field, you must select the **Per Period** interest rate, whether it should be based on a field or value, and whether it should be a percentage or decimal.

In the **Per period** field, enter "1" if the rate is per period; otherwise, enter a field or value that will determine the per period rate.

In the **Payment amount** field, enter the payment made each period. You can select either field or value. When you use a field, payments can be treated as either credit (positive) or debit (negative) amounts. This amount cannot change during the life of the annuity.

In the **Present value** field enter the lump sum amount that a series of future payments is worth at the present time. Again, you select either a field or value.

In the **Future value** field, enter the cash balance you want to attain after the last payment is made.

Specify an option for when the payments for this annuity are due.

Payment on Principal

Category: Financial

What it Does: A **Payment on Principle** smart field calculates the payment for an annuity based on periodic fixed payments and a fixed interest rate.

When Would I use a Payment on Principle Smart Field? Use this smart field when you want to determine the payment amount for an annuity.

Criteria: On the Criteria tab for a **Payment on Principle** smart field, you must select the per period **Interest rate**, whether it should be based on a field or value, and whether it should be a percentage or decimal.

In the **Per period** field, enter "1" if the rate is per period; otherwise, enter a field or value that will determine the per period rate.

In the **Payment amount** field, enter the payment made each period. You can select either field or value. When you use a field, payments can be treated as either credit (positive) or debit (negative) amounts. This amount cannot change during the life of the annuity.

In the **Payment Periods** field, enter the total number of payments in the annuity.

In the **Present value** field enter the lump sum amount that a series of future payments is worth at the present time. Again, you select either a field or value.

In the **Future value** field, enter the cash balance you want to attain after the last payment is made.

Specify an option for when the payments for this annuity are due.

Percentile

Category: Statistical

What it Does: A **Percentile** smart field breaks data from a selected field into one hundred groups.

When Would I use a Percentile Smart Field? You may want to use this smart field to show which percentile each of your constituents falls in based on their giving amount.

Criteria: On the Criteria tab for a **Percentile** smart field, select a field containing data you want to break into one hundred groups. You must indicate whether you want the groups to be sorted in ascending or descending order and whether to include zero value gifts.

Periodic Payment

Category: Financial

What it Does: A **Periodic Payment** smart field calculates the payment for an annuity based on periodic fixed payments and a fixed interest rate.

When Would I use a Periodic Payment Smart Field? Use this smart field when you want to determine the payment for an annuity.

Criteria: On the Criteria tab for a **Periodic Payment** smart field, you must select the per period **Interest rate**, whether it should be based on a field or value, and whether it should be a percentage or decimal.

In the **Per period** field, enter "1" if the rate is per period; otherwise, enter a field or value that will determine the per period rate.

In the **Payment Periods** field, enter the total number of payments in the annuity.

In the **Present value** field enter the lump sum amount that a series of future payments is worth at the present time. Again, you select either a field or value.

In the **Future value** field, enter the cash balance you want to attain after the last payment is made.

Specify an option for when the payments for this annuity are due.

Pledge Valuation

Category: Fundraising

What it Does: A **Pledge Valuation** smart field calculates the value of pledges based on a series of periodic cash flows and a discount rate.

Different calculations are used to determine the value of regular and irregular pledges. You must indicate whether a pledge is irregular in ***The Raiser's Edge*** gift record using the **Frequency** field, an attribute, or some other means. You can then use the **Pledge Valuation** smart field, in conjunction with several other smart fields, to determine the value of your pledges.

Regular pledges are those with the first installment scheduled for sometime this year with other installments equally spaced over time. Irregular pledges have varying intervals of time between payments or are promised to pay in greater than one year with no payments in between. Regular and irregular pledges are computed in ***The Information Edge*** using two different calculations.

An ***Information Edge*** analytic is available that consists of several smart fields and other components that enable you to determine the value of your pledges. For more information, see "Pledge Valuation Analytic" on page 320.

You can order the analytic by contacting:

TIEsupport@blackbaud.com

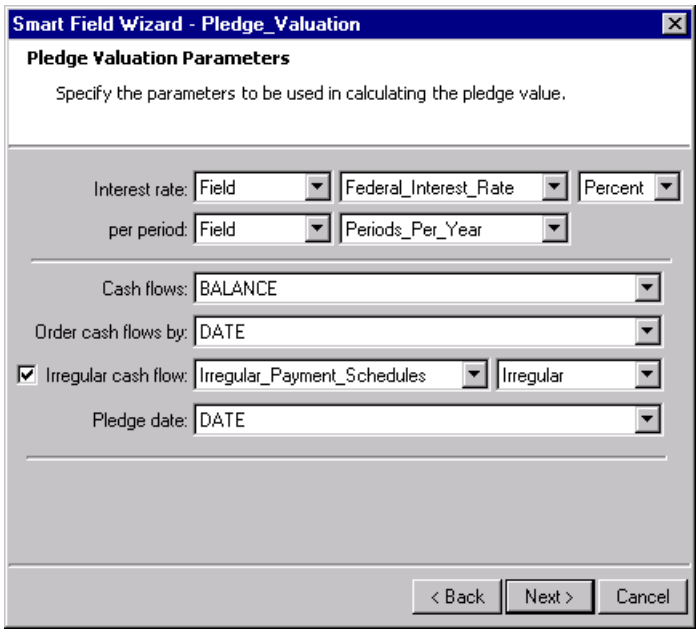
When Would I use a Pledge Valuation Smart Field? Use this smart field to determine the value of long term pledges. Long term pledges are pledges paid over a period of time greater than one year. The donor may promise to pay a large gift in installments over multiple years, or pay a large amount sometime in the future. A pledge must be valued and reported on the balance sheet at its net present value if a clear record of an intention or promise to pay exists. Generally, these pledges are valued using the published IRS charitable gift rate on the date of the gift. The rate does not change over the life of the pledge.

Criteria: On the Criteria tab for a **Pledge Valuation** smart field, you must specify the information that will determine how pledges are valued.

For more information, see the following procedure.

➢ Adding Pledge Valuation smart field criteria

1. When creating a Pledge Valuation smart field, select the Criteria tab.



2. In the **Interest rate** field, indicate the discount rate to apply to pledges. If you are using the Core Solution, the value is based on a **Federal Interest Rate** smart field included in the solution, and you will need to enter the appropriate values in the smart field's properties. Otherwise, you need to create a field to track the changing interest rate over time and select that field here.
3. In the **per period** field, you can specify to use a "Value" and enter "1" if all your pledges are annual. If you have any pledges other than annual, you need to create a smart field that will translate the installment frequency into a number (such as "4" for a quarterly frequency). You then need to specify that this field be used in **per period**. A **Periods Per Year** smart field is included in the Core Solution for this purpose.
4. In the **Cash flows** field, select a field to identify values to use for periodic cash flows. For example, you can select the BALANCE field for your pledges.
5. In the **Order cash flows by** field, select a date field that will be used to sort periodic cash flows in the order in which they were received.
6. If you have irregular pledges, mark the **Irregular cash flow** checkbox. The Core Solution includes an **Irregular Payment Schedules** smart field that determines whether a cash flow is irregular. Otherwise, you must create a smart field to determine this, and enter the value it creates for irregular pledges.
7. In the **Pledge date** field, select the field containing values for when pledges were made.

Present Value

Category: Financial

What it Does: A **Present Value** smart field calculates the present value of an annuity based on periodic fixed payments to be paid in the future and a fixed interest rate.

When Would I use a Present Value Smart Field? Use this smart field when you want to determine the present value for an annuity.

Criteria: On the Criteria tab for a **Present Value** smart field, you must select the per period **Interest rate**, whether it should be based on a field or value, and whether it should be a percentage or decimal.

In the **Per period** field, enter "1" if the rate is per period; otherwise, enter a field or value that will determine the per period rate.

In the **Payment Periods** field, enter the total number of payments in the annuity.

In the **Payment amount** field, enter the payment made each period. You can select either field or value. When you use a field, payments can be treated as either credit (positive) or debit (negative) amounts. This amount cannot change during the life of the annuity.

In the **Future value** field, enter the cash balance you want to attain after the last payment is made.

Specify an option for when the payments for this annuity are due.

Quartile

Category: Statistical

What it Does: A **Quartile** smart field breaks data from a selected field into four groups.

When Would I use a Quartile Smart Field? Use this smart field when you want to divide data into four distinct groups. For example, you may use a quartile field as part of a marketing segmentation to divide the mailing into four segments.

Criteria: On the Criteria tab for a **Quartile** smart field, select a field containing data you want to break into four groups. You must indicate whether you want the groups to be sorted in ascending or descending order and whether to include zero value gifts.

Quintile

Category: Statistical

What it Does: A **Quintile** smart field breaks data from a selected field into five groups.

When Would I use a Quintile Smart Field? Use this smart field when you want to divide data into five distinct groups. For example, you may use a quintile field as part of a marketing segmentation to divide the mailing into five segments.

Criteria: On the Criteria tab for a **Quintile** smart field, select a field containing data you want to break into five groups. You must indicate whether you want the groups to be sorted in ascending or descending order and whether to include zero value gifts.

RFM

Category: Fundraising

What it Does: An **RFM** smart field segments donors by applying a score based on recency, frequency, and monetary value of gifts.

When Would I use an RFM Smart Field? Use this smart field when you want to want to segment donors based on how recently, how frequently, and how much they give.

Criteria: On the Criteria tab for an **RFM** smart field, you must specify the date and amount ranges you will use to group your donors.

Search and Replace

Category: Transformation

What it Does: A **Search and Replace** smart field replaces all occurrences of a string within a string, with a third string.

When Would I use a Search and Replace Smart Field? You may want to use this smart field when you want to make corrections to your data entry or scrub your data. For example, if you know information is wrong for several donors, you can search for all instances of that information and replace it with the correct information. If you want to correct the source data, you could create a Writeback query based on this smart field, and use the query as the basis for a global change in ***The Raiser's Edge***.

Criteria: On the Criteria tab for a **Search and Replace** smart field, you must first specify the field you want to search. Then you specify whether the value you are searching for is another field or a value you will enter, and then do the same for the value you want replace it with.

You can mark the **Match case** checkbox to ensure that the search includes only words that contain exactly the same capitalization as the data in the **Search for** field.

Sequence

Category: Miscellaneous

What it Does: A **Sequence** smart field sorts records in a table and updates the appropriate field value with a corresponding sequence number.

When Would I use a Sequence Smart Field? You can use this smart field when you want to rank gifts by date or amount.

Criteria: On the Criteria tab for a **Sequence** smart field, you select the sort conditions for the field value. You can select fields from the database and indicate whether you want to sort the records in ascending or descending order.

Soundex

Category: Miscellaneous

What it Does: A **Soundex** smart field converts sequences of characters to a four character code that groups similar sounding words or names. Soundex is a method of indexing based on the way words sound instead of the way they are spelled. This gives you the ability to identify similar sounding, but differently spelled, words or names because they have the same soundex code.

When Would I use a Soundex Smart Field? Soundex fields can be useful with the *Warehouse* feature (available in the Enterprise version of ***The Information Edge***). For example, because Smith, Smythe, and Smyth all have the same soundex code, you can easily identify a donor listed as "Smith" in one data mart, and "Smyth" in another.

Criteria: On the Criteria tab for a **Soundex** smart field, you must select the field containing values you want to convert to soundex codes.

The soundex code consists of the first letter of the last name followed by three digits. The digits are generated based only on certain consonants and vowels are not used.

1) B,F,P,V
2) C,S,K,G,J,Q,X,Z
3) D,T
4) L
5) M,N
6) R

If two or more adjacent letters (not separated by a vowel) have the same numeric value, only one is used. If the first and second letter in the name have the same value; the second letter does not generate a digit. If the converted consonants do not generate three digits, the code is completed with zeros. For example, the name "Lee" has no consonants after the L, resulting in a soundex code of "L000."

Standard Deviation

Category: Statistical

What it Does: A **Standard Deviation** smart field selects the standard deviation for a selected field in a one-to-many relationship.

When Would I use a Standard Deviation Smart Field? Use this smart field when you want to want to measure the range of variation from a field's average values.

Criteria: On the Criteria tab for a **Standard Deviation** smart field, you must specify the field for which you want to select the standard deviation.

Straight-line Depreciation

Category: Financial

What it Does: A **Straight-line Depreciation** smart field calculates the straight-line depreciation of an asset for a single period you choose.

When Would I use a Straight-line Depreciation Smart Field? Use this smart field to determine the depreciation of an asset that is depreciated by a like amount each year over a specified period of time.

Criteria: On the Criteria tab for a **Straight-line Depreciation** smart field, you must select either a field or value to represent the cost of the asset, the salvage value of the asset at the end of its useful life, and the length of the useful life of the asset.

Sum

Category: Statistical

What it Does: A **Sum** smart field calculates the total amount for a field in a one-to-many relationship.

When Would I use a Sum Smart Field? Use this smart field to determine the total amount of all values in a field. For example, you may want to include the total value of all gifts given by each constituent on the Constituents table.

Criteria: On the Criteria tab for a **Sum** smart field, you must select the one-to-many field for which you want to add together all values.

Sum-of-Years Digits Depreciation

Category: Financial

What it Does: A **Sum-of-Years Digits Depreciation** smart field calculates the sum-of-years digits depreciation of an asset for a specific period you choose.

When Would I use a Sum-of-Years Digits Depreciation Smart Field? An asset often loses more of its value early in its lifetime. Use this smart field to determine the depreciation of an asset of this type.

Criteria: On the Criteria tab for a **Sum-of-Years Digits Depreciation** smart field, you must select either a field or value to represent the cost of the asset, the salvage value of the asset at the end of its useful life, the length of the useful life of the asset, and the period for which you want to find the depreciation amount.

SYBUNT

Category: Fundraising

What it Does: A **SYBUNT** smart field indicates donors who gave “Some Year But Unfortunately Not This Year.”

When Would I use a SYBUNT Smart Field? Use this field to flag donors who gave in a previous year, but not this year.

Criteria: On the Criteria tab for a **SYBUNT** smart field, you must specify the date field to be used, and the start date and end date for your “This Year” date range.

This Month

Category: Fundraising

What it Does: A **This Month** smart field indicates donors who have given in the current calendar month.

When Would I use a This Month Smart Field? Use this field to flag donors who gave at least one gift during the last month.

Criteria: On the Criteria tab for a **This Month** smart field, you must specify the date field to be used.

This Year

Category: Fundraising

What it Does: A **This Year** smart field indicates donors who have given in the current calendar year.

When Would I use a This Year Smart Field? Use this field to flag donors who gave at least one gift during the last year.

Criteria: On the Criteria tab for a **This Year** smart field, you must specify the date field to be used.

USA ZIP Distance

Category: Geographic

What it Does: A **USA ZIP Distance** smart field calculates the distance in miles between two ZIP codes.

When Would I use a USA ZIP Distance Smart Field? If you are visiting an area, you may want to find out which of your constituents live nearby so you can visit them. You can enter a ZIP code and determine how far donors live from that ZIP code based on their preferred address.

Criteria: On the Criteria tab for a **USA ZIP Distance** smart field, you must select a ZIP CODE address field and then enter the ZIP CODE from which you want to determine the distance from those field values.

Financial Smart Field Calculations

The Information Edge smart fields use calculations that are equivalent to some calculations in *Excel*. If you use one of the *Excel* calculations below to derive certain values in spreadsheets, you can use the corresponding smart field to derive that value in ***The Information Edge***.

Smart Field	Excel Formula	Description
Depreciation	DDB	Returns the depreciation of an asset for a specified period using the double-declining balance method or some other method you specify.
Effective Annual Interest Rate	EFFECT	Returns the effective annual interest rate.
Future Value	FV	Returns the future value of an investment.

Smart Field	Excel Formula	Description
Interest Payment	IPMT	Returns the interest payment for an investment for a given period.
Interest Rate	RATE	Returns the interest rate per period of an annuity.
Net Present Value	NPV	Returns the net present value of an investment based on a series of periodic cash flows and a discount rate.
Number of Periods	NPER	Returns the number of periods for an investment.
Payment on Principal	PPMT	Returns the payment on the principal for an investment for a given period.
Periodic Payment	PMT	Returns the periodic payment for an annuity.
Present Value	PV	Returns the present value of an investment.
Straight-line Depreciation	SLN	Returns the straight-line depreciation of an asset for one period.
Sum-of-Years Digits Depreciation	SYD	Returns the sum-of-years' digits depreciation of an asset for a specified period.

Solutions

Appendix B

In this Appendix

Pledge Valuation Analytic 320
Regular and Irregular Pledges 321
Preparing Your Raiser's Edge Data 321
Identifying Irregular Pledges 321
Handling Write Offs 322
Creating Queries 322
Timing Considerations 323
Installing the Pledge Valuation Analytic 323
Creating the Data Mart 324
Using the Pledge Valuation Analytic 324
Viewing the Results in a Pivot Table 325
Pledge Valuation Analytic Smart Fields 325
Federal Interest Rate Smart Field 326
Periods Per Year Smart Field 326
Irregular Payment Schedules Smart Field 326
Pledge Valuation Smart Field 326

In addition to all the reports you can create using ***The Information Edge***, analytic packages are available as optional modules to help you perform analyses to get precisely the information you need about specific areas of your fundraising.

Pledge Valuation Analytic

Long term pledges are pledges paid over a period of time greater than one year. The donor may promise to pay a large gift in installments over multiple years, or pay a large amount sometime in the future. A pledge must be valued and reported on the balance sheet at its net present value if a clear record of an intention or promise to pay exists. Generally, these pledges are valued using the published IRS charitable gift rate on the date of the gift. The rate does not change over the life of the pledge. Additionally, organizations should book an allowance for uncollectible pledges based on the past collection history.

For organizations receiving a large number of long term pledges, valuing these pledges according to FAS 116 can be a challenge. You can pay an auditor to value these pledges for your balance sheet or value them using *Excel*. Paying an auditor can be expensive, and using *Excel* breaks the audit trail between the pledge record in ***The Raiser's Edge*** and its reported value on the balance sheet.

The Information Edge provides an analytic that enables users of ***The Raiser's Edge*** to value their long term pledges. Additionally, ***The Information Edge*** provides a complete audit trail from the net present value of the pledge to the underlying gift record in ***The Raiser's Edge***. From the value in ***The Information Edge***, an auditor can drill through to the record in ***The Raiser's Edge*** for verification purposes.

DATE	(Multiple Items)			
CAMPAIGN	**CONSTIT_CODE**	**BALANCE**	**Pledge_Valuation**	**Discount**
Endowment Campaign	Alumni	$220,829.79	$186,540.80	$34,288.99
	Cadet	$180.00	$159.47	$20.53
	Current Parent	$8,933.40	$7,993.23	$940.17
	Foundation/Corporation	$50,000.00	$42,809.66	$7,190.34
	Individuals Non-Alumnus	$6,125.00	$5,617.49	$507.51
	Parent/Graduate	$2,040.00	$1,784.88	$255.12
	Widow	$350.00	$337.50	$12.50
Endowment Campaign Total		**$288,458.19**	**$245,243.03**	**$43,215.16**
Campaign for Excellence	Alumni	$1,264,619.03	$1,034,354.01	$230,265.02
	Current Parent	$9,675.00	$8,745.26	$929.74
	Former Faculty	$1,000.00	$878.00	$122.00
	Former Parent	$20,000.00	$19,138.76	$861.24
	Foundation/Corporation	$17,500.00	$13,474.30	$4,025.70
	Individuals Non-Alumnus	$2,000,000.00	$1,913,875.60	$86,124.40
	Parent/Graduate	$0.00	$0.00	$0.00
Campaign for Excellence Total		**$3,312,794.03**	**$2,990,465.91**	**$322,328.12**
Grand Total		$3,601,252.22	$3,235,708.94	$365,543.28

Regular and Irregular Pledges

The Pledge Valuation Analytic can handle pledges with either regular or irregular payments. Regular payments are those paid in installments equally spaced over time. Examples of regular payment schedules are annually, quarterly, monthly, and those payment installments have a specific beginning and end date.

Irregular payment schedules include pledges that are paid with varying intervals of time between payments and pledges that are promised to pay in greater than one year with no payments in between. ***The Raiser's Edge*** includes a pledge installment option of irregular; however, many users record a pledge consisting of a single payment in the future as simply a single installment. By default, both of these are treated as irregular in ***The Information Edge***. Additionally, you may want to use an attribute or some other means to identify your irregular pledges in ***The Raiser's Edge***.

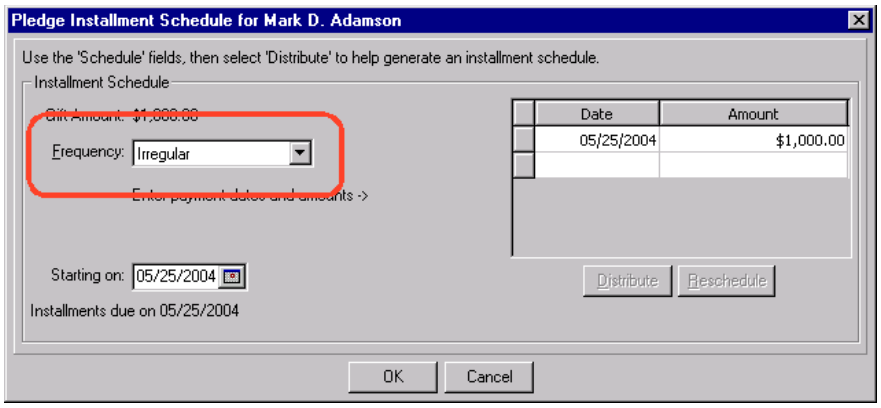
The Analytic uses two Net Present Value (NPV) calculations. One is used to value pledges with regular installments. The other values pledges identified as irregular in ***The Raiser's Edge***.

Preparing Your Raiser's Edge Data

Before using the Pledge Valuation Analytic in ***The Information Edge***, you first need to perform several tasks in ***The Raiser's Edge*** to make the process more efficient. You must determine how your organization will handle pledge write offs. Additionally, you must create one or more queries.

Identifying Irregular Pledges

You need to identify irregular pledges (if they exist) in ***The Raiser's Edge***. On ***The Raiser's Edge*** Pledge Installment screen, select "Irregular" or "Single Installment" in the Frequency field. The Pledge Valuation Analytic automatically assigns the value of "Irregular" to these pledges.



You can also identify a pledge as irregular using an attribute or other methods. Then you can modify the Irregular Payment Schedules smart field to recognize these pledges as irregular. For more information about this smart field, see the Appendix at the end of this concept brief.

If payments extend beyond the current year, but begin within it – for example, "every other year starting today" – then the pledge is regular and the Net Present Value calculation for regular pledges can be used. If the payments do not begin until sometime after the current year, or if the intervals between payments are expected to be inconsistent, the pledge should be flagged as irregular so it will be processed using the Net Present Value calculation for irregular pledges.

Handling Write Offs

When a pledge or pledge installments are deemed uncollectible, ***The Raiser's Edge*** offers a mechanism to write off the remaining pledge balance. Most organizations have a contra account in the financial system for uncollectible pledges. On the face of the financial statements, the long term pledges receivable account is shown net of the allowance account for uncollectible pledges. The amount in this offset account is generally based on an organization's past experience in collecting on promises to pay. Writing off pledge balances in ***The Raiser's Edge*** enables an organization to use the specific write off method. The accounting office needs to analyze the effect of these specific write offs on the balance of the Allowance account. This analysis should be performed before running the Pledge Valuation Analytic in ***The Information Edge***.

Creating Queries

When you install the analytic, the records pulled into ***The Information Edge*** for analysis should be based on a ***Raiser's Edge*** query that includes only constituents with long term pledge gifts.

Constituent Query. Create a dynamic constituent query named "Constituents with Pledges that have Installments." On the Criteria tab, specify criteria of "Gift Type equals Pledge."

On the Output tab, you can select the following fields if you want to run the query in ***The Raiser's Edge*** for reference purposes to verify that the proper records are included.

- Constituent Name
- Constituent ID
- Gift Date
- Pledge Balance
- Number of Installments
- Installment Dates
- Last Installment Date
- Last Payment Amount
- Last Payment Date
- Fund
- Fund ID

Gift Query. Create a gift query that retrieves all pledges that need to be discounted, plus all pledges that were open and unpaid as of the end of the fiscal year, but that were paid off between the fiscal year end and the date you are running the query to determine long term pledge values.

On the Criteria tab, specify the following:

Gift Type equals Pledge

Gift date is less than or equal to current fiscal year end date

Gift pledge balance is greater than 0

OR

Gift Type equals Pledge

Pledge Balance equals 0

Gift date is less than or equal to current fiscal year end date

Latest payment made within this fiscal year

Last installment due greater than the last day of this fiscal year

Timing Considerations

Due to the way ***The Raiser's Edge*** handles dates when a pledge payment is received, you should consider two things before running the Pledge Valuation analytic. If a pledge payment was outstanding at fiscal year end, but the donor paid off the installment or the entire balance after fiscal year end, but before the queries and exports in the data mart were performed, the results can be distorted because ***The Raiser's Edge*** does not differentiate between the date the payment is received and whether that payment was outstanding at the end of the fiscal year.

To handle this, you can create a static query for constituents with outstanding pledges, as well as a gift query for outstanding pledges **at fiscal year end**. You need both these queries to ensure only the pledges for these constituents appear in your results – because the constituent may have other long term gifts that are not applicable for this calculation. A static query gives you a snapshot of what was outstanding as of the end of the fiscal year. If necessary, you can create the static query in advance and then, using *Queue* in ***The Raiser's Edge***, specify that it run at the end of your fiscal year. Use this static query as the basis for your ***Raiser's Edge*** export when you install the Pledge Valuation analytic.

If you do not run the static query at fiscal year end, you can modify the gift query to include pledges with payments received between the end of the fiscal year and the date you are processing the pledge values. In the analytic data mart properties, you can select this query as the basis for filtering gifts in the export definition by clicking **Criteria** on the Output tab of the Export Definition.

Installing the Pledge Valuation Analytic

To install the Pledge Valuation analytic, save the "PledgeValuation.TIE" file you got from Blackbaud in a location accessible from the machine running ***The Information Edge***. From ***The Information Edge*** menu bar, select **File**, **New**. Select **Data Mart**, **Core Solution**. The Select Core Solution screen appears for you to browse to the file. Select it and the properties for the Pledge Valuation data mart appear.

We recommend that you set up a separate data mart specifically for determining values of long term pledges. Once the data mart is established in ***The Information Edge***, you can drill through directly to ***Raiser's Edge*** records from it.

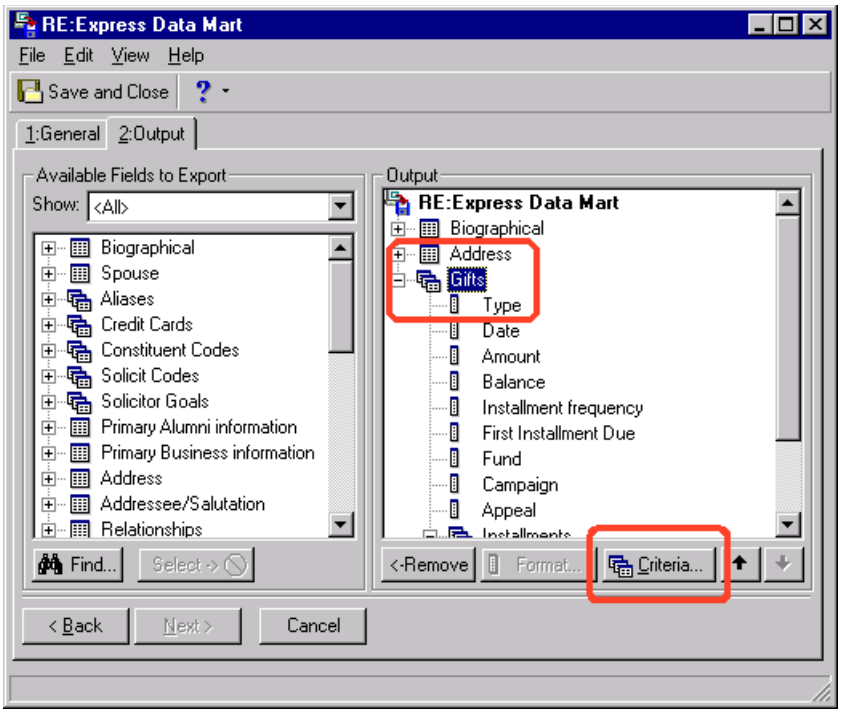
Creating the Data Mart

When you install the Pledge Valuation analytic, you should base the export for the data mart on ***The Raiser's Edge*** query or queries you set up previously.

Creating the Export

On the Export Definition tab of the export properties for the data mart, click **Edit Export**. The Export screen opens to the General tab.

On the General tab, click Include and select the constituent query you set up earlier. Then select the Output tab.



Select **Gifts** in the Output box, and click **Criteria**. The Gifts Criteria screen appears.

You can select the Filters tab if you want to specify a query so that only selected pledge records appear in the data mart. For example, you may want to filter on the gift query you created earlier, or you may have created a query that includes pledge gifts of only a certain amount or higher or pledge gifts that have a specific attribute assigned (such as NPV equals Yes), and you may want to select that query as a filter.

If you do not need a query to filter the pledges, select the Gift Types tab. Move only the "Pledge" and "MG Pledge" gift types into the Include these Gift Types box. Click **OK** to finish establishing the gift criteria.

Once you finish creating the data mart properties, process the data mart. You are then ready to begin using the Pledge Valuation analytic.

Using the Pledge Valuation Analytic

The Information Edge Pledge Valuation Analytic features several components that enable you to estimate and analyze your pledge values.

- Several smart fields, such as **Federal Interest Rate**, are included.
- The analytic is able to handle the interest rate based on installment frequency. You should enter the appropriate interest rates as published by the IRS in the input parameters for this condition type smart field. The analytic actually uses two Net Present Value (NPV) calculations. One NPV calculation is used to value pledges with regular installments. The second creates values for pledges with a value of “Irregular” in the **Irregular Payment Schedules** smart field. \
- The Pledge Valuation data mart contains a Gifts cube with several default Dimensions and Measures.

Viewing the Results in a Pivot Table

The Pledge Valuation Analytic includes a Pivot Table in the Gifts cube that you can use to view pledge value information. You can customize the table to further suit your needs.

DATE	(Multiple Items)			
CAMPAIGN	CONSTIT_CODE	BALANCE	Pledge_Valuation	Discount
Endowment Campaign	Alumni	$220,829.79	$186,540.80	$34,288.99
	Cadet	$180.00	$159.47	$20.53
	Current Parent	$8,933.40	$7,993.23	$940.17
	Foundation/Corporation	$50,000.00	$42,809.66	$7,190.34
	Individuals Non-Alumnus	$6,125.00	$5,617.49	$507.51
	Parent/Graduate	$2,040.00	$1,784.88	$255.12
	Widow	$350.00	$337.50	$12.50
Endowment Campaign Total		$288,458.19	$245,243.03	$43,215.16
Campaign for Excellence	Alumni	$1,264,619.03	$1,034,354.01	$230,265.02
	Current Parent	$9,675.00	$8,745.26	$929.74
	Former Faculty	$1,000.00	$878.00	$122.00
	Former Parent	$20,000.00	$19,138.76	$861.24
	Foundation/Corporation	$17,500.00	$13,474.30	$4,025.70
	Individuals Non-Alumnus	$2,000,000.00	$1,913,875.60	$86,124.40
	Parent/Graduate	$0.00	$0.00	$0.00
Campaign for Excellence Total		$3,312,794.03	$2,990,465.91	$322,328.12
Grand Total		$3,601,252.22	$3,235,708.94	$365,543.28

The Pivot Table includes **Pledge Valuation** and **Discount Amount** columns. The **Discount Amount** column calculates the discount amount by subtracting the net present value from the pledge balance. Both the total of the **Pledge Valuation** column and the total of the **Discount Amount** will be booked in the accounting system for balance sheet purposes.

To drill through to a ***Raiser’s Edge*** record, select a cell containing records you want to view in ***The Raiser’s Edge***. With the cursor in the selected cell, either double-click or select **Drill Through** under the Percent toolbar button.

Pledge Valuation Analytic Smart Fields

Several smart fields are included in the Pledge Valuation Analytic.

Federal Interest Rate Smart Field

This condition type smart field is used to include the annual federal interest rate with each pledge. You need this field because the interest rate when a pledge is made "lives" with that pledge for the year the pledge was made, even though the rate changes from year to year. Therefore, this smart field tracks the interest rate for each year. Default values are included for each year on the Conditions screen of the smart field properties; however, you should enter the correct rates for your organization as published by the IRS.

The properties of each condition include a date range and interest value for that time period. Enter the correct interest rate for each period in the **Use this value** field.

Periods Per Year Smart Field

If you have anything other than annual pledges, you also need the **Periods per Year** Smart Field. Depending on when your payments are scheduled, the value of the pledge will change. This condition type smart field is used to translate the installment frequency (such as "Annual" or "Monthly") into a number. The per-period interest rate is calculated by dividing the annual interest rate by this number. If the interest rate is already per period, you do not need to use this field. However, if the interest rate is annual, you must use this field to determine the period rate.

For example, in the properties for the condition for a quarterly period, "4" is the entry in the **Use this value** field.

Irregular Payment Schedules Smart Field

This condition type smart field identifies irregular pledges in ***The Raiser's Edge***. Identifying irregular pledges with this smart field ensures that the proper **Net Present Value** calculation is used to determine their value.

The properties of the condition specify that records assigned a frequency of "Irregular" or "Single Installment" in ***The Raiser's Edge*** are given the value "Irregular."

If necessary, you can modify the properties that identify a pledge as irregular. For example, if you use an attribute to identify these pledges, you can modify the smart field to include the "Irregular" value with them.

Pledge Valuation Smart Field

The **Pledge Valuation** Smart Field ties all the information together to give you a value for your pledges.

The **Interest rate** is derived from the **Federal Interest Rate** Smart Field value, the **per period value** is derived from the **Periods Per Year** Smart Field value, and the **Irregular cash flow** checkbox is marked and determined by an **Irregular Payment Schedules** Smart Field value of "Irregular."

Glossary

Analyzer View

Using the Microsoft *SQL Server Data Analyzer*, you can view various graphical representations of your analytical reports.

Business Intelligence

Business intelligence (BI) includes a wide range of technologies for gathering, storing, analyzing, and providing access to data to help you make better business decisions. BI applications include query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining.

Calculated Member

A calculated member is a measure that is calculated at run time. Only the definitions for calculated members are stored in a cube; the actual values are calculated when they are needed to answer a query.

Chart

Charts make it easy for you to see comparisons, patterns, and trends in your data. Using the Microsoft *Office Chart Component* (included with ***The Information Edge***), you can interact with a dynamic chart that updates to show the latest changes to the data on which the chart is based.

Child

A member that is directly subordinate to another member in a hierarchy.

Character Delimited Format

A type of export in which you select the character (for example, quotes) to use as a separator field. These types of files are often referred to as “ASCII” files.

Classification

A predictive data mining task that assigns records to specific categories according to the rules of a data mining model.

Closed-loop analysis

A process that enables end users to act on the outcomes of their analyses to automatically drive business processes.

Clustering

A data mining task that divides data into small groups based on similarity without predefinition of the data groups.

Cube

A multidimensional data structure that represents the intersections of each unique combination of dimensions. At each intersection, there is a cell that contains data.

Dashboard

The Dashboard page offers a convenient central place for you to view Pivot Tables, Charts, Data Analyzer views, and other ***Information Edge*** items.

Data Analyzer View

When you have *SQL Server Analysis Services*, you can use Data Analyzer as an alternative way to view data. Data Analyzer is an advanced analysis application that enables you to graphically view the data in your database.

Data Mart

Data marts drive ***The Information Edge***, providing the data and OLAP cubes for analysis. A data mart is a collection of data that is structured in a way that facilitates analysis. Data marts support the study of a single subject area by bringing together into a single location relevant data from all the programs you use to gather data.

Data Mining

Data mining is sorting through data to identify patterns and establish relationships. Data mining techniques include:

- Association - looking for patterns where one event is connected to another event
- Sequence or path analysis - looking for patterns where one event leads to another later event
- Classification - looking for new patterns (May result in a change in the way the data is organized)
- Clustering - finding and visually documenting groups of facts not previously known
- Forecasting - discovering patterns in data that can lead to reasonable predictions about the future

Data Warehouse

A repository for data. A centralized data store that feeds into a series of subject-specific data stores called data marts. A data warehouse can consist of a collection of integrated data marts.

Descendant

Any member at any lower level in relation to another specific member.

Dimensions

A categorically consistent view of data. All members of a dimension belong together as a group. For example, a geography dimension might include levels for Country, Region, and City.

Extract, Transform, and Load (ETL) Processes

Processes responsible for transporting and integrating data from one or more sources (such as ***The Raiser's Edge***) into ***The Information Edge***.

Flatten Data

The process of combining data from multiple tables in a relational database into one table in the multidimensional database. For example, a "donor" table in ***The Information Edge*** may contain data from address, relationship, and other tables in a relational database.

Hierarchies

The organization of levels within a dimension reflects how data is aggregated from detailed levels to summarized levels and serves as the drill-down path for top-down analysis.

Load

See "Extract, Transform, and Load (ETL) Processes" on page 329.

Measure

A Numeric value that is of interest for analysis. For example, an OLAP cube may include gift amounts by month, by appeal, and by constituent. The measure in this case is gift amount, and each intersection of the three dimensions has a different gift amount value.

Member

An item in a dimension that represents one or more occurrences of data.

Metadata

Information about the properties of data, such as business logic that describes the structure and content of dimensions and measures.

Multidimensional Analysis

A way of analyzing data from the top down by examining measures simultaneously broken out by multiple dimensions.

Multidimensional Database

A multidimensional database stores and processes data as three dimensional cubes instead of the "flat" rows and columns of traditional relational databases.

ODBC

ODBC stands for Open database connectivity. ***The Information Edge*** can extract data from some programs using an ODBC connection.

OLAP

OLAP (online analytical processing) is a type of data processing that enables you to easily and selectively extract and view data from different points-of-view. To enable this kind of analysis, OLAP data is stored in a multidimensional database. Whereas a relational database can be thought of as two-dimensional, a multidimensional database considers each data attribute as a separate "dimension." OLAP software can locate the intersection of dimensions (For example, all gifts given to an appeal during the month of April by constituents over 55 who live in Florida) and display them. Attributes such as time periods can be broken down into subattributes.

OLAP can be used for data mining or the discovery of previously unseen relationships between data items. Using *Export* in ***The Raiser's Edge***, or Open Database Connectivity (ODBC) in other programs, data can be imported from existing relational databases to create a multidimensional database for OLAP.

OLTP

OLTP (online transaction processing) is a data processing system designed to record all the day to day transactions of an organization as they occur. ***The Raiser's Edge*** is an OLTP system. OLTP systems are designed to run the day-to-day raw data of an organization, which requires efficient, detailed processing of transactions such as gift entry. OLTP systems operate in real time and continuously. Because they are already meeting these demands, OLTP systems have little analytical ability.

Packages

Packages are mailings in segmentations. For example, you may have glossy calendar, brochure, and post card packages which you assign to different segments within a segmentation.

Parent

A member that is directly above another member in a hierarchy.

Pivot Table

A Pivot Table lets you analyze data in a custom format similar to Microsoft's *Excel*. Using the Microsoft *Office Pivot Table Component* (included with ***The Information Edge***), you can view and organize information and look for details within your data.

Refresh Rate

How often data is updated.

Relational Database

A relational database consists of data organized as a set of tables. The data can be accessed or reassembled in many different ways without changing the organization of the tables. Most databases that support the day-to-day operations of an organization are relational databases.

Segmentation

A data mining technique that analyzes data to discover mutually exclusive collections of records that share similar attribute sets. For example, you can generate segments based on the recency, frequency, and monetary value of gifts, and then create different mailings based on this information. Segmentation enables you to group donors on the basis of characteristics such as demographic, geographic, recent giving history, and wealth. Different segments often have different or unique needs. Segmentation helps the effectiveness of your fundraising because certain segments may represent more attractive or attainable donors than others, and because different segments often require customized mail appeals.

Sibling

A member that is at the same level as one or more other members sharing the same parent.

Slicing and Dicing

Two complementary methods of interacting with data. Slicing means isolating a specific member of a dimension for analysis; dicing means breaking a data set into smaller pieces by examining how measures intersect with multiple dimensions.

Smart Field

Smart fields enable you to use SQL statements to create new fields that are then populated by your data and can be incorporated into your Pivot tables, charts, and data analyzer views.

For example, if you have a table showing donations for constituents last year, you can create a smart field that multiplies that entry by one point five to determine how much you hope to receive from each constituent this year. This new field can then be used in ***Information Edge*** reports.

SQL

Structured Query Language is an industry standard language for accessing data in a relational database management system.

Transform

See “Extract, Transform, and Load (ETL) Processes” on page 329.

WriteBack

RE:WriteBack enables you to send information from ***The Information Edge*** back to ***The Raiser’s Edge*** by selecting a smart field value by which to group constituents. A static query is then created in ***The Raiser’s Edge*** based on the smart field value you specified.

Index

A

Access wizard
  explained 226
  primary keys 229
accessing
  The Information Edge 8
  Universal Source Connector, XML editor 221
action bar 13
activating segmentations 193
adding
  calculated member 67
  charts 158
  custom RFM smart field 291
  data analyzer view 162
  data from other sources in RE:Express and FE:Express 39
  data sources 129
  data view 80
  database users 136
  dimension 65
  measure 66
  monitored field 88
  pivot 148
  pledge valuation smart field 310
  RE:WriteBack 118
  segmentation 174
  test segment 189
  test segmentation 190
  universal source connector data marts 214
  Warehouse
    data warehouses 260
alias, see friendly names 12
amount raised by segment 200
analyzing segmentations
  all segmentations 201
  amount raised by segment 200
  cumulative response 199
  individual segmentation 200
  lift charts 199
  response % by segment 199
  test segment performance 200
average smart field 268

B

bin smart field 268
BIPACKAGE 242
BIZINTEL IDs
  FE:Express 57
  RE:Express 46
BIZINTEL_{TABLENAME}_SYSTEM_ID 57
BIZINTEL_FE_ID 57
BIZINTEL_PARENTID
  FE:Express 57
  RE:Express 46
BIZINTEL_PARENTID_{TABLENAME} 57
BIZINTEL_REID 46
BIZINTEL_RERECORSDID 46

C

calculated member templates 69
calculated members 67
Charts
  about Charts 154
  adding a new Chart 158
concatenation smart field 274
condition smart field 275
contributor smart field 285
copy smart field 285
copying segmentations 190
count smart field 290
creating
  crystal report 165
  custom properties 192
  data mart
    Access database, from 226
    Excel spreadsheet, from 230
    FE:Express, with 46
    OLEDB Data Source Wizard, with 234
    RE:Express, with 26
    SQL Server Wizard, with 237
  data mart with FE:Express 47
  data mart with RE:Express 26
  export definitions 89
  HTML publication 124
  segmentations 174
  snapshot table 86
  XML file for XML editor 222
Crystal Reports 165
cubes 63
  about cubes 63
  adding calculated members 67
  adding dimensions 65
  adding measures 66
cumulative response 199
custom data marts 214
custom properties 191
custom RFM smart field 290

D

Dashboards
  creating and adding items to 169
  renaming 170
dashboards 15

Data Analyzer Views
about Data Analyzer Views 161
adding a Data Analyzer View 162
data flow in The Information Edge 4
data marts
BIZINTEL IDs
FE:Express 57
RE:Express 46
bringing in data from The Financial Edge 46
bringing in data from The Raiser's Edge 26
creating
FE:Express, with 46
RE:Express, with 26
creating custom 214
creating from Access database 226
database tables 16
exporting data from 19
FE:Express 46
installing marts created by Blackbaud 58
processing data manually 59
RE:Express 26
refresh history, viewing 60
refreshing data 59
scheduling automatic data processing 127
universal source connector data marts, adding 214
warnings when processing 59
data sources
about 129
adding 129
importing Raiser's Edge databases manually 134
data tables, see tables
data types
Excel Wizard in Universal Source Connector 231
linking tables to an RE:Express data mart 45
data warehouses, adding 260
database tables 16
database users 136
date interval smart field 293
days since smart field 293
decile smart field 293
dependencies 21
depreciation smart field 294
difference, calculated member template 70
dimensions 65
does not contain 86
drill through 152

E

editing grid display 14
effective annual interest rate smart field 294
examples, expression smart field 296
Excel Pivot exports 95
Excel wizard
explained 229
primary keys 233
Export
about export 89
create definition 89
creating Financial Edge exports in FE:Express 50
creating Raiser's Edge exports in RE:Express 33
Excel Pivot 95
filtering options 94
Postal Discount 97
exporting
data from The Information Edge 19
Segmentation grid 196
segmentations 194
expression smart field 294
Expression Wizard
about 83
conditions 84

F

FE:Express
about FE:Express 46
adding data from other sources 39
BIZINTEL IDs 57
creating a data mart with 47
additional tables tab 55
cube options tab 53
definition tab 49
general tab 48
publications tab 56
Raiser's Edge source tab 54
Financial Edge export in 50
field statistics, viewing 62
FIELDSET 244
filtering segmentations 184
Financial Edge, The, integration with 3
first gift smart field 298
frequently used terms, *see* glossary 327
friendly names 12
full refresh 30
future value smart field 298

G

getting started 8
glossary 327
grids, changing display in 14

H

HTML Publications
about HTML Publications 123
creating 124
viewing 125

I

importing
Blackbaud databases automatically 134
crystal report 167
segmentations into The Raiser's Edge 196
incremental refresh
explained 30
Universal Source Connector data mart
explained 255
incremental command text macros 256
time stamp date format 256
installing
data marts created by Blackbaud 58
FE:Express 46
RE:Express 26
integration with other Blackbaud software 3
interest payment smart field 298
interest rate smart field 299

K

key value smart field 299

L

latency smart field 302
latest gift smart field 302
lift charts 199
list smart field 302
logins, SQL server 135
LYBUNT smart field 302

M

Marketing Segmentation optional module 171
maximum smart field 303
measures 66
median smart field 303
members, calculated 67
menu bar 12
Microsoft OLEDB Data Source Wizard 234
minimum smart field 303
mode smart field 303
monitored field query smart field 304
monitored fields
explained 87

N

navigating in The Information Edge 10
net present value smart field 307
noncontributor smart field 307
nth item smart field 267
number of periods smart field 307

O

OLAP cubes
understanding 16
open, *see* accessing 8
optional modules, unlocking 13

P

packages 183
parameters 75
payment on principal smart field 308
percentage of dimension total, calculated member template 70
percentage of measure, calculated member template 70
percentage of parent total, calculated member template 71
percentile smart field 309
periodic payment smart field 309
Pivot exports 95
Pivot Tables
about Pivot Tables 145
accessing Raiser's Edge or Financial Edge records from 152
adding a Pivot Table 148
drill through 152
pledge valuation smart field 309
plug-in for segmentation 196
Postal Discount
exports 97
present value smart field 311
previous date value, calculated member template 73
primary keys
Access Wizard 229
Excel wizard 233
processing data marts 59
Publications
static reports 125
understanding 20

Q

quartile smart field 312
query, creating in The Raiser's Edge 118
quick start, The Information Edge 8
quintile smart field 312

R

Raiser's Edge, The
integration with 3

query 118
sending data to 19
rank, calculated member template 73
RE:Express
about RE:Express 26
adding data from other sources 39
BIZINTEL IDs 46
creating a data mart with 26
additional tables tab 37
cube options tab 35
export definition tab 32
general tab 27
publications tab 38
refresh options tab 28
Raiser's Edge export in 33
RE:WriteBack
about RE:WriteBack 118
adding an RE:WriteBack 118
understanding 19
refresh history, data marts 60
refreshing data 59
full 30
in individual cubes 64
incremental 30
response % by segment 199
RFM smart field 312

S

sample, expression smart field 296
schema 241
security 136
segmentation
about segmentation 171
activating 193
adding a segmentation 174
analyzing
all segmentations 201
amount raised by segment 200
cumulative response 199
individual segmentation 200
lift charts 199
response % by segment 199
test segment performance 200
copying 190
creating 174
custom properties 191
exporting 194
filtering 184
importing into The Raiser's Edge 196
packages 183
plug-in 196
rearranging order of segments 177
test segmentations 188
understanding 21
selections 111
send data to The Raiser's Edge 19
sequence smart field 313
server, SQL logins 135
smart fields
average 268
bin 268
concatenation 274
condition 275
contributor 285
copy 285
count 290
creating 100
custom RFM 290
date interval 293
days since 293
decile 293
depreciation 294
effective annual interest rate 294
expression 294
first gift 298
future value 298
interest payment 298
interest rate 299
key value 299
latency 302
latest gift 302
list 302
LYBUNT 302
maximum 303
median 303
minimum 303
mode 303
monitored field query 304
net present value 307
noncontributor 307
nth Item 267
number of periods 307
overview 100
payment on principal 308
percentile 309
periodic payment 309
pledge valuation 309
present value 311
quartile 312
quintile 312
RFM 312
sequence 313
soundex 313
standard deviation 314
straight-line depreciation 314
sum 315
sum-of-years depreciation 315
SYBUNT 315
this month 315
this year 316
understanding 17
USA ZIP distance 316
snapshot tables 86
soundex smart field 313

SOURCESET 245
SQL server logins 135
standard deviation smart field 314
static reports, publishing 125
statistics across children, calculated member template 72
straight-line depreciation smart field 314
subqueries 279
sum smart field 315
sum-of-years depreciation smart field 315
SYBUNT smart field 315

T

TABLE 243
tables
  data tab 63
  database 16
  field statistics 62
  fields 62
  joining 279
  snapshot tables 86
template, calculated member 69
test segment performance 200
test segmentations 188
The Information Edge
  data flow 4
  getting started 8
  navigating 10
  overview 1
  understanding 2
this month smart field 315
this year smart field 316
top or bottom list, calculated member template 72
tree view 11

U

understanding
  OLAP cubes 16
  segmentation 21
  smart fields 17
  The Information Edge 2
Universal Source Connector 203
  Access database wizard 226
  Excel wizard 229
  incremental refresh
    explained 255
    incremental command text macros 256
    time stamp date format 256
  schema 241
  XML editor
    accessing 221
    using 222
universal source connector data marts, adding 214
unlocking optional modules 13
USA ZIP distance smart field 316
users 136

V

views 80

W

Warehouse optional module
  adding data warehouses 260
  explained 259
  key values 260
warnings when processing data marts 59

X

XML
  editor
    accessing 221
    using 222
  schema 241

Y

year to date value, calculated member template 73

corporate headquarters

Blackbaud, Inc.

2000 Daniel Island Drive
Charleston, SC 29492
USA

- Web www.blackbaud.com
- Phone 1.843.216.6200
- Fax 1.843.216.6100

support

Review the Customer Support Guide for information about our online resources and support procedures. Download the Customer Support Guide from our Web site's Support Overview.
www.blackbaud.com/support/support.aspx

documentation

We welcome your comments and suggestions about our user guides and help files. In the subject line of your email, please include the product name and version number.
documentationcomments@blackbaud.com

- **Academy Manager**
- **The Financial Edge**
- **Accounting for Nonprofits**
- **The Education Edge**
- **Education Administration**
- **The Raiser's Edge**
- **The Raiser's Edge Enterprise**
- **The Information Edge**
- **The Researcher's Edge**
- **The Patron Edge**
- **The Patron Edge Online**
- **Blackbaud NetCommunity**

sales

Contact us for more information about our products and services.

- Email solutions@blackbaud.com
- Phone 1.800.443.9441
- Fax 1.843.216.6111

international contacts

Blackbaud Europe Ltd

38 Queen Street
Glasgow
G1 3DX
Scotland

- Web www.blackbaud.co.uk
- Email solutions@blackbaud.co.uk
  support@blackbaud.co.uk
  admin@blackbaud.co.uk
- Support (UK Local Rate)
  0845 658 8500
- Support (From Outside UK)
  +44 (0) 141 575 0801
- Phone +44 (0) 141 575 0000
- Fax +44 (0) 141 575 0999

Blackbaud Pacific Pty Ltd.

ABN 73 095 925 170
Suite 4, 561-577 Harris Street
Ultimo NSW 2007
Australia

Mailing Address
PO Box K736
Haymarket NSW 1240
Australia

- Email sales@blackbaud.com.au
  support@blackbaud.com.au
  administration@blackbaud.com.au
- Freecall 1800 688 910 Australia
  0800 444 712 New Zealand
- Phone +61 2 9211 7366
- Fax +61 2 9211 7607

about Blackbaud

Blackbaud is the leading global provider of software and related services designed specifically for nonprofit organizations. Approximately 13,000 organizations use Blackbaud products and consulting services for fundraising, financial management, business intelligence, and school administration. Blackbaud's solutions include *The Raiser's Edge®*, *The Financial Edge™*, *The Education Edge™*, *The Patron Edge™*, *Blackbaud® NetCommunity™*, *The Information Edge™*, *WealthPoint™*, and *ProspectPoint™*, as well as a wide range of consulting and educational services. Founded in 1981, Blackbaud is headquartered in Charleston, South Carolina, and has operations in Toronto, Ontario; Glasgow, Scotland; and Sydney, Australia.

REV - 112805

© 2006, Blackbaud Inc.

This material contained herein is for informational purposes only. Blackbaud makes no warranties, expressed or implied, in this summary. The information contained in this document represents the current view of Blackbaud, Inc., on the items discussed as of the date of this publication.

Blackbaud, the Blackbaud logo, The Raiser's Edge, The Financial Edge, The Education Edge, The Patron Edge, Blackbaud NetCommunity, The Information Edge, WealthPoint, and ProspectPoint are trademarks or registered trademarks of Blackbaud, Inc. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.